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ALEX von HUMBOLDT

S.H. 1825

THE

CABINET

OF

FOREIGN VOYAGES AND TRAVELS;

OR,

ANNUAL SELECTIONS

FROM THE LATEST WORKS OF THAT DESCRIPTION WHICH HAVE NOT YET APPEARED IN ENGLISH.

VOL. I.—FOR 1825.

TO WHICH IS PREFIXED A

RETROSPECT

OF THE

GEOGRAPHICAL DISCOVERIES

OF THE LAST TEN YEARS.

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PREFACE.

AMONG the various branches of human knowledge, few have been more diligently and successfully cultivated, in modern times, than researches into the geography of unknown or imperfectly explored countries, and into the manners, customs, &c. of their inhabitants. It would be useless to dwell here on the numerous questions which the earlier geographers were unable to answer, but which have been solved wholly, or in part, by the exertions of English, French, German, Russian, and North-American travellers.

But, notwithstanding all that has already been done, there is still much remaining to be effected; and though no extensive discoveries, in the strict sense of the term, can now be expected, there are still many

problems, of which we desire the solution, and new and interesting information is unquestionably yet in store, respecting countries and nations, our knowledge of which is imperfect and unsatisfactory. We need only mention the eagerness with which the public look for the farther results of the English expeditions to the north of the American continent, of the Russian expeditions in the north of Siberia, of the various attempts to penetrate to the interior of Africa, &c. We have yet to explore the interior of New Holland, and the other great islands of the Southern Ocean; and the interior of Asia would certainly afford inexhaustible materials to an enlightened traveller. This great interest taken by the public in general, in such undertakings, has had the effect of stimulating numerous travellers, of different nations, to arduous and dangerous expeditions; and many have also been sent out at the expence of enlightened sovereigns.

Of the valuable works published by foreign travellers in their respective languages, only the smaller portion ever becomes

known to the English reader. Many important works of this description, it is true, are translated; especially when attention has been drawn to them by some peculiar circumstances. But there are many others, the very existence of which is unknown in England; others which, though containing some interesting portions, it would not be worth while to translate entire; and others, again, which never appear in a separate form, but are inserted in some of the numerous periodicals, especially of Germany, where they are lost, and buried, as it were, being besides often too short to print singly. Hence, it appears, that a great mass of valuable and interesting matter remains wholly unknown to the English public; and it is to obviate this circumstance, that the plan of the publication, of which we here present the first part to the reader, has been adopted. We are induced to flatter ourselves that it will meet with a favourable reception, because it is formed on the model of a similar publication, commenced some years ago by the late learned Professor Zimmermann, which

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GENERAL VIEW

OF

THE MOST IMPORTANT GEOGRAPHICAL RESEARCHES AND DISCOVERIES

During the last Ten Years.

THE exploring of the North Polar Ocean, and particularly the search for the celebrated north-west passage, has hitherto been the most important object of the British navigators. Unfortunately this problem has not yet been solved.

Captain Parry's voyage, in the years 1819-20, indicated the possibility of a passage from Baffin's Bay to Beering's Straits. Captain Parry had not only found an opening from this bay, through Lancaster Sound, into the Frozen Sea, but even succeeded in penetrating beyond 110° longitude west of Greenwich. But the shortness of the time, during which the sea remains open in these high latitudes, prevented him from advancing farther westward. This voyage, however, afforded an important accession to our geographical knowledge. Parry

showed that Baffin's Bay is, properly, not a bay, but a sea; that Greenland is an island detached from the rest of America; and that to the west of 110° of longitude there are many islands in the Frozen Sea, to which he gave the collective name of the Northern King George's Archipelago. The voyage, and their winter residence in Melville Island, enriched physics, and natural history, with many new observations and discoveries. The whale fishers were the first to take advantage of the information afforded by this; they now pass through Lancaster Sound, and return with larger cargoes than formerly.

The British Admiralty, encouraged by the happy result of Captain Parry's first voyage, sent him, in the year 1821, to the Northern Frozen Ocean, to make farther discoveries. Two ships, therefore, the Hecla and the Fury, were placed under his command, and, like those on the preceding voyage, provided with necessaries and conveniences of every kind for three years. The first object was Hudson's Bay, whence Parry was to explore the north and north-west, to seek a channel either to Prince Regent's Bay, or some other part of the seas visited the preceding year, and then penetrate farther to the west. On the 8th of May, 1821, Captain Parry left Deptford, and after a very good passage arrived, towards

the end of June, in Hudson's Bay, in 61° 40′ north latitude and 53° west longitude. Their next object was to find a passage through Repulse Bay, and then proceed thence to Hearne's Sea, where they were to winter. Our readers are aware that this expedition failed in attaining the object proposed, but that the result not being considered as decisive of the possibility of ultimate success, the Admiralty has sent him upon a third voyage.

Simultaneously with Captain Parry's first expedition, the British Government, in May 1819, sent Lieutenant Franklin, who, accompanied by Dr. Richardson, and Lieutenants Hood and Back of the Navy, were to proceed from the west coast of Hudson's Bay, through the interior of North America, and attempt to reach the north coast, and explore it along the sea shore, as far as possible to the east. Franklin arrived, towards the end of the summer of 1819, at York Factory, the principal of the British settlements in this part of North America, set out in the autumn upon his journey into the interior of this continent, and passed part of the winter in Cumberland House. In the next spring and summer of 1820, they continued their journey farther northward, over Lake Buffalo, the Athapescow and Slave Rivers, to the Great Slave Lake; pro-

ceeding from which, they reached, by the beginning of September, the neighbourhood of Coppermine River, which had not been visited by any European since Hearne, where they wintered in 64° 30′ north latitude, from September 1820 to June 1821. In the summer of 1821 still advancing towards the north, Franklin was so fortunate as not only to descend the Coppermine River, to the Frozen Ocean, but also undertook a voyage, as long as the season permitted him, in two boats along the coast, towards the east. On this excursion, which no European had made before him, he determined the geographical situation of every point on this coast, and discovered, between 108° and 111° west longitude a large bay extending southward, from 68° to 66° 30′ north latitude, to which he gave the name of George IV. Coronation Bay. After Franklin had examined nearly the whole coast, and sought in vain for an outlet into Hudson's Bay, he turned again to the north, to ascertain whether he could obtain his object by proceeding along the coast eastward; but he went no farther than about 68° 20′ of latitude, where, on the 22nd of August, the harbingers of approaching winter warned him to think of returning. Point Turnagain was the most northerly land they saw. From this point the coast appeared to stretch

towards the east. The islands lying along the newly discovered coast of North America, between the mouth of Coppermine River and Coronation Bay, were called Duke of York's Archipelago. They returned from Coronation Bay, along Hood's River, which flows into it, and then by land, through entirely unknown, inhospitable and uninhabited regions, where the company suffered severely from want of provisions. Franklin did not reach the Great Slave Lake till the middle of winter, and left that place in the spring of 1822, to return to England.

If Parry had already proved that Greenland was an island, it appears probable, from the discoveries of Mr. Scoresby, jun. that it consists of several large islands. While engaged on the whale fishery, in the summer of 1822, he made a very careful geographical survey of the long east coast of Greenland. It comprised the coast from 69° to 75° of latitude, hitherto known by the name of the Old Greenland, which has been lost sight of for some centuries. Scoresby discovered several considerable inlets, or straits, which seemed to indicate separate islands. It appeared from his survey, that this whole coast has been very incorrectly laid down, even on the best maps, and that the errors in longitude were, in most instances, not less than 15°. He landed in seve-

ral places, found every where recent traces of inhabitants, and obtained specimens of various domestic utensils. A report of the missionaries in the Danish settlements in Greenland, dated September 1821, had already shown, that both here and farther along the south coast, in the neighbourhood of Statenhuk, there existed several, hitherto unknown, tribes. This report states that these Greenlanders, who were still heathens, had sent to the colony, to solicit missionaries. The missionary, Mr. Kleinschmidt, visited the tribe near Statenhuk, and found there a population of 500 souls. The country appeared to him to be very suitable for a European settlement, and the inhabitants told him, that, a few years since, some Greenlanders from the east coast had passed the winter among them, and expressed a wish to be instructed in the Christian religion. In consequence of this account the king of Denmark consented to the establishment of a new mission in the vicinity of Statenhuk, on the spot pointed out by Mr. Kleinschmidt.

In the eastern hemisphere, the Russians made considerable progress in exploring that part of Northern Asia bordering on the Frozen Ocean. Lieutenant Lasarew, who was sent from Archangel, on the 21st of June 1819, with orders to

sail to the Straits of Waigatz, then to go round Nova Zembla, and survey the coasts of those islands, was indeed obliged to return without executing his commission, as the ice in these parts had accumulated more than usually. But, on the other hand, geography was enriched with a valuable map of New Siberia, published by Professor Erdmann, in May 1820, reduced from the survey made by Mr. Pschenizin of Irkuzk, on an expedition, in 1811, to those recently discovered islands.

The Russian government, in the summer of 1820, sent out two other expeditions, farther to explore the Icy Sea. The one, under the command of Lieutenant Wrangel, of Livonia, (who accompanied Captain Krusenstern in his voyage round the World,) was destined to make a more accurate survey of the north-eastern coasts of Asia, and to look for the land said to have been seen by Serjeant Andrew, in 1762, to the north of the mouth of the Kolyma. The other, under the direction of Lieutenant Anjou, was to repair from the mouth of the Jena to New Siberia. Wrangel penetrated as far as the north-eastern point of Asia, or Cape Schehalazkoi Nos, and determined its situation to be 70° 4′ latitude, and 172° 10′ west longitude of Greenwich. Consequently the supposition of some geographers,

that America and Asia were united to the north of Beering's Straits, may be considered as completely refuted. Lieutenant Wrangel returned to St. Petersburg in March 1824, and the little that has transpired excites an extraordinary desire for the publication of the account of his long and perilous expedition. Captain Cochrane, who made a pedestrian journey, in 1820, from St. Petersburg, through Siberia to Kamtschatka, and in 1821 reached this north-eastern point of Asia, confirmed its division from America. In the second object of Wrangel's expedition, namely, the discovery of the land seen by Andrew, he was not so fortunate. By means of sledges drawn by dogs, he traversed the ice from the mouth of the Kolyma, eighty geographical miles, in a northern direction; but being unable to proceed any farther, he was forced to return without finding land. But it must not hence be concluded that no such land exists.

To examine also the American coasts of the Icy Sea, the government of Russia despatched, in 1819, an expedition, consisting of two corvettes, under the command of Lieutenants Wasilieff and Schischareff, to Beering's Straits, to endeavour to find a passage towards the east. It did not attain this main object, but Wasilieff reached 71° 7′ latitude, and discovered two capes

situated farther north than Icy Cape. In August 1823 Captain Otto Von Kotzebue was again sent to Beering's Straits, to make a new attempt to discover a north-east passage.

Two other vessels, the Golownin and the Baranow, fitted out in 1821 by the Russian American company, to make discoveries on the north-western coast of America, returned successful. They had not only accurately determined and explored several points of that coast, but also discovered a pretty large island, to which they gave the name of Numirak, in 59° 54′ 57″ north latitude, and 193° 47′ 2″ east longitude of Ferro.

The Southern Frozen Ocean has been no less diligently explored of late years. Captain Smith's discovery of several pretty considerable islands, in October 1819, is of much importance; they are situated to the south of Terra del Fuego, between 61° and 64° south latitude and 56° and 67° west longitude of Paris, and have received the name of New South Shetland. We are acquainted with five larger and several smaller islands. More land has been seen southward. The nature of the country is correspondent with their geographical situation. They are uninhabitable rocks, covered with snow and ice, with no other vegetation than mosses, and serving as

now bent his course towards Brazil, which he left on the 23rd of April, and arrived safe, on the 24th of July, at Cronstadt, after an absence of two years and one-and-twenty days.

The Great Ocean has also lately been visited by mariners of other nations. Captain Freycinet, who sailed in 1817 on a voyage round the world, returned in November 1820, but in an American vessel, the Uranie frigate, in which he performed his voyage, having been wrecked, on his return home, on the Falkland Islands. The greater part of the collections and papers were saved. Besides a more accurate geographical knowledge of the northern part of the Great Ocean, this voyage has brought a great accession to the various departments of natural philosophy, by experiments on the pendulum, and astronomical, magnetical, barometrical and thermometrical observations. He has brought home above sixty specimens of sea-water, and several hundred drawings.

The voyage of the French Captain Philibert, in the years 1819 and 1820, to Guiana, Isle de Bourbon, Java, Borneo, and the Philippines, appears, from what has hitherto transpired, to promise valuable information respecting the present state of these countries, particularly the Philippines. We may likewise expect interesting re-

sults from another voyage, in which Lieutenant Duperrey, commanding the French corvette Coquille, is now engaged. He sailed from Toulon on the 11th of August 1822, and was to proceed to the Cape, the Indian Archipelago, the western coast of New Holland, the South Sea Islands, and to return by Cape Horn. His instructions relate chiefly to mathematics and natural philosophy, and particularly to determine with greater accuracy the figure of the southern hemisphere.

The voyage of the Rev. Messrs. Tyerman and Bennet, who embarked in April 1821, to visit the missions founded by the Missionary Society of London in the South Sea, will probably tend to enlarge our acquaintance with the countries and people they visit. They arrived on the 27th of September, the same year, at Otaheite, where they were well received by the new converts. They will return by way of China, and the two Indian peninsulas, where they are also to inspect the state of the missions.

Having thus taken a view of the most important voyages, we will turn to the proceedings of travellers on land, which have proved equally interesting to science.

Of all parts of the world, Africa is that in the more accurate exploring of which the greatest activity is at present displayed. The difficulties

which, uniting above Guz in Nubia, form the Nile. Hitherto the Asrek, the sources of which Bruce said he found in Abyssinia, has been considered as the main river; but English decides in favor of the Abiad, because the Asrek, at the confluence of the two streams, is not half so broad as the other, and its dark waters run for several miles unmixed with those of the White River. Sennaar, a town of about three English miles in circumference, is situated on the Bahr el Asrek, which the inhabitants, however, call Adit; but in consequence of a late conquest by heathenish mountaineers from the south, it is now an heap of ruins. The natives affirm, that the Asrek has its source in the mountains Gibel el Gumara (that is, the great mountain chain, denominated on our maps the Mountains of the Moon), about 60 days journey by camels, almost due south; that this river, at various distances from the town, received several small streams (among which we may suppose that to be whose sources were discovered by Bruce) from Abyssinia and the mountains beyond Sennaar; that the Abiad flowed almost parallel with the Adit; and that its source, though likewise in the Gumara chain, was farther distant than that of the latter. English doubts that the Abiad has its sources in the same latitude with the Adit, be*cause,* at least during his stay, it began to rise 20

days sooner than the other, and its water is of a different colour. With respect to Timbuctu and the Niger, Mr. English was not able to learn any particulars. Nobody then had gone farther than Kordofan and Darfour.

The opthalmia, under which English had been suffering for a long time, obliged him to return to Egypt, and he was unable to accompany the Pacha's army farther to the south, which, however, Cailliaud and Letorzec were so fortunate to do.

The army went along the Nile, by which name Cailliaud, like preceding travellers, calls the river on which Sennaar is situated. They came first to the kingdom of Bertot, which is bounded on the east by the Nile, on the west by the great district of Bornou, and on the south by the elevated village of Darfoke. It was inhabited by a heathen tribe, against whom the Pacha made war, but could not wholly subdue them, as the mountains afforded too many retreats. About five weeks after their departure from Sennaar they came into the district of Fazoële (generally called Fazuclo or Fazoglo on our maps), the Mahometan chiefs of which negociated with the Pacha and promised to pay a tribute. From this place they proceeded still farther into the interior, where Ismael had again to make war on other

heathen hordes. In the district of Gamanil there is auriferous sand, of which Cailliaud had a great deal washed, but obtained only from six to eight grains of gold per hundred weight. English, on the other hand, thinks these countries richer in gold, and even speaks of mines of that metal, which, as he says, are in the mountains of Fezueli, by which name he calls Fazoële. A native gave the Pacha an account of a piece of gold which must have been six inches in diameter. The female prisoners brought to Sennaar from the mountains of Bokki, which border on Fazoële, wore many gold rings and bracelets, of which they were soon deprived by the soldiers. The most southern place to which Ismael Pacha penetrated was Singheh (Singué) in Darfoke, in 10° north latitude. They were unable to sail up the Bahr el Abiad, because the water was too low. The military expeditions of the Pacha therefore terminated here, and they returned to Fazoële, where they arrived in February 1822. Cailliaud soon after set out on his homeward voyage, and in December the same year landed in the harbour at Marseilles. It is probable that in future still greater advantages will be derived from the conquest of these unknown countries. As long as the government of Egypt continues to favor Europeans, naturalists and antiquaries will be able to

travel without hindrance, backwards and forwards, on the banks of the Nile.

A long time will probably elapse before we can say the same of the mysterious Niger. The opinions and accounts of even the latest travellers are still divided on the course of the lower part, and also on its mouth. That the Zaire, or Congo, is not the lower part of the Niger, seems to be considered certain since Tuckey's unfortunate expedition on this river in 1816. Another opinion, namely, that the Niger empties itself into the Bay of Benin, has lately been brought forward by Mr. Hutton, who returned from Guinea in 1821. This falling into the Bay of Benin he presumes to take place after the river coming from Timbucto joins with the Nile of the negroes, or the Tzad, which comes from Bornou. What Caillaud was able to learn on this subject at Fazoële, seems to indicate a junction of the Bahr el Abiad with the Niger. Those geographers are probably in the right, who endeavour to reconcile the various opinions on the course of the Niger by assuming a great hollow in the interior of Northern Africa, with immense basons of water, into which not only the Niger, but also other streams coming from the mountains of the interior, are lost. We might, in that case, conceive, that when the waters are at their greatest height, during and im-

mediately after the rainy season, a junction of the Niger with the Nile may take place, by the medium of that inland water, by a river coming from the east, which, about this time, would be connected, by overflowing, with the Bahr el Abiad. Several of the large streams flowing into the Bay of Guinea might then be considered as issues of this great inland water.

We may expect farther light to be thrown on this point, as well as on interior Africa in general, by Dr. Oudney, Major Denham, and Lieutenant Clapperton, who set out from Tripolis with an escort furnished by the Bey, after a residence of nearly a year at Mourzouk, the capital of Fezzan. Very interesting letters were received from them at the end of the year 1823, from which it appears that they had penetrated very far into the kingdom of Bornou, and there was every appearance of the ultimate success of their expedition. They had met with the great lake of Bornou, called, in the country, the Tzad, into which two considerable rivers empty themselves. Nothing that the travellers had seen, is favorable to the hypothesis of the communication between this great lake and the waters of the Nile.

Captain Gordon, of the English service, left Cairo in May 1822, to seek for the sources of the Bahr el Abiad. He set out quite alone, firmly

resolved not to return without making some important discoveries. The German traveller, Baron Von Rüppel, in a letter to Baron Von Zach, of November 1823, writes that he had received certain information of the death of Captain Gordon at Sennaar.

While the English are thus employed in exploring the interior of Africa, they do not neglect to clear up the obscurity which involves some of its maritime countries and those adjacent. The success of Belzoni's journies induced the king of England to wish that ancient Lybia, or that tract of land on the northern coast of Africa which included the Cyrenaica and Mamarica of the ancients, to be more accurately explored than it had been by Della Cella in 1817, who accompanied the army of the Pacha of Tripolis. It is highly probable, that hitherto unknown remarkable remains of Grecian and Roman buildings are to be found in those once flourishing countries. The British government accordingly resolved, in 1821, to send an expedition from Tripolis to Lybia, under the command of Mr. Beechey, formerly secretary to Mr. Salt, British consul-general in Egypt, and a companion of Belzoni. To facilitate this object, the Admiralty at the same time equipped a small vessel, which was to sail along the coast, accompanying the travellers on land, to support them

coast of Africa into the interior of this continent, particularly in a north-eastern direction, farther than any preceding traveller, and has made some very important discoveries. He advanced as far as 24° southern latitude, and reached the Meribowheys and Marutzis, two tribes hitherto unknown, civilized in part, though still heathens. Their capital cities, Maschau and Korritschähn, which are considerable, contain each from 12,000 to 16,000 inhabitants. Campbell likewise found in these parts a new kind of rhinoceros, which seems to bear some resemblance to the fabulous unicorn of the ancients. The head alone was so heavy, that it required eight men to carry it to the water.

Lastly, we may expect very important information respecting the imperfectly known eastern coasts of Africa, as a British expedition, consisting of the ships Leven and Barracouta, fitted out on purpose, were sent to survey it in the year 1822, under the command of Captains Owen and Cutfield. Under them are several naval officers, all good engineers, seventeen sea cadets, and a suitable number of soldiers. The ships have numerous boats on board, in order to navigate the rivers from their mouth. The first object of the expedition is to examine the coast of Cape Colonia, then the mouth of the Rio d'Infanta, the

river St. Christopher, &c. A more accurate knowledge of the sea-coast is also included in their plan. In July 1822 they arrived at Cape Colonia. It is expected that the execution of their project will occupy several years.

With respect to the most recent and important travels in Asia, we have already noticed those of Captain Cochrane, who, proceeding from St. Petersburg, traversed, on foot, the whole of Siberia, to the most north-easterly point of this quarter of the globe. His travels, which have been lately published, are replete with valuable information respecting these countries and the manners of the inhabitants. Still more perhaps may be expected from the travels of Professor Hansteen, who sets out from Christiania, chiefly with the view to make accurate observations on the variation and dip of the magnetic needle, throughout the north of Asia, beyond 60° of latitude. He will also make experiments on the pendulum, and geographical, barometrical, and meteorological observations. If circumstances permit, he intends proceeding on one of the larger rivers of northern Asia, for instance, the Jenisei, or the Lena, to the coasts of the Frozen Ocean. He is accompanied by a young man, as mineralogist, botanist and draughtsman.

While Russia is undertaking important mari-

time expeditions, it neglects no opportunity to advance the science of geography, by researches in the interior of Asia, and has sent missions to Bucharia, Chiva, &c. of which very interesting accounts have been published. An expedition, sent about a year since, was to penetrate as far as Thibet.

We may also expect an increase to our knowledge of Asia, and its inhabitants, from the missionary society of Basle. Five missionaries are intended to be sent to Persia. One of them has written a report from St. Petersburg, in April 1822, in which he communicates his preparations and plans for the mission. They repair first to Astrachan, on the Caspian Sea, where they will remain some months, then proceed to Tiflis in Georgia, where they intend to establish a mission. This is to serve as the central point of their exertions, for the conversion of the Mahometans and heathens. But before they found this settlement, they purpose undertaking a journey into the interior of Persia, by way of Tauris and Casbin, to Teheran, Ispahan and Shiraz. An opportunity will also be taken to visit the Curdes, Nestorians, and Armenians. They will return by way of Selmas, Mossul, &c.

Mr. Rich, the British resident at Bagdad, (who died in October 1821, of the cholera morbus,)

ook a very important journey to Curdis-
1 1820. Before he traversed this district,
mined the ruins of Ctesiphon and Seleucia.
rincipal object was to determine astrono-
ly the most remarkable points on this tour,
) make himself acquainted with the remains
tiquity, which are here every where to be
rith. Rich came to places which had never
)en visited by an European; he discovered
ruins of Sassanide cities, royal sepulchres,
ng seats, burial grounds with bones, earthen
&c. He caused excavations to be made
efri, and found a building containing re-
able fresco paintings, the colours of which
retained all their original brilliancy. At
urmati, he visited the naptha and salt pits,
n the 8th of May, 1820, arrived at Solimania.
Rich's journey to these countries will be
l, not only in a geographical point of view,
:ave among the Curdes the recollection of
estimable benefit. His lady, who accom-
d him, was fortunate enough, by persuasion
presents to the women and children, to
ome their repugnance to innovation, and
troduce vaccination. The small pox had
rto made great ravages in these parts. On
)turn to Bagdad, where he arrived on the
of March 1821, Mr. Rich made part of the

journey on the Tigris. In May the same year, Messrs. Wilson and Hyde, who had already travelled in Egypt and Syria, came to Bagdad to visit the ancient Mesopotamia and Babylonia, and thence to go to India.

The Rev. Mr. Berggren, chaplain to the Swedish embassy at Constantinople, made a journey in the summer of 1820, to Rhodes, Cyprus and Lebanon, where he hired a lodging at a Maronite convent, at Antura, in order to prepare himself to proceed farther into Arabia. He here made many remarkable observations on the mountain and its inhabitants, discovered several new plants, and found that the accounts of Volney, and other travellers in these parts, are not agreeable to truth. Berggren's tour will give accurate information respecting the Druses and their religious mysteries, of which so little is known. He had an opportunity of seeing their sacred books. He afterwards intended to go to Palestine, but was obliged to go to Egypt, on account of a war which suddenly broke out between the inhabitants of Lebanon, and Abdalla Pacha, of St. Jean d'Acre, and also in consequence of the Greek insurrection. Berggren was hindered from extending his journey from this place into the interior of Africa, by a severe illness. Having recovered of it at Alexandria,

he returned to his own country by way of Jerusalem and Constantinople.

Very interesting researches were made in 1819, in the neighbourhood of the Dardanelles, and the classic soil of ancient Troy, by Mr. Philip B. Webb, who is preparing a particular account of them for publication.

New information may also soon be expected on some countries in the Indian Ocean. Mr. Crawfurd, formerly British resident at the court of the Sultan of Java, author of a work on the Indian Archipelago, was commissioned by the Marquis of Hastings to explore Birman and Cochin China, and to give the East India Company detailed information of the facilities which these countries afford to commerce. On the 13th of March 1822, a scientific expedition was sent to Bencoolen, in Sumatra, which is commanded by the astronomer of the East India Company.

At the close of the year 1819, some Englishmen, being wrecked on the coast of the Chinese island of Hainan, had an opportunity of visiting not only that island, but of travelling along a part of the south coast of China, as far as Canton. They belonged to the East India Company's ship, the Friendship, which, in a dreadful storm on the night of the 11th of November 1819, was totally

wrecked near that island; the greater part of the crew however escaped. Fifty-five persons, among whom was Mr. Rey, the supercargo, who afterwards published an account of the voyage, were received in the most hospitable manner by these good-natured islanders, conveyed to the continent, and were very well treated as they proceeded through the maritime provinces to Canton. As they passed on this journey through 20 walled cities and 256 villages, and made a stay at several places, it may easily be supposed that Rey's journal must contain novel and interesting information respecting those places, and the manners and customs of the Chinese.

In America no country has been visited by such numerous and learned travellers as Brazil, during the last ten years. Notwithstanding the researches of former travellers, particularly Prince Neuwied and Mr. Von Eschwege, this extensive country still offered various problems to be solved by the geographer and naturalist. His majesty the emperor of Austria embraced the opportunity which was afforded by the marriage of the Arch-duchess Leopoldina with the Crown-Prince of Brazil, in the spring of 1817, to send at the same time some naturalists and artists, who were commissioned to examine, upon the spot, the natural curiosities of the country, and to send col-

lections of some, and accurate drawings of others. The choice fell on Dr. Pohl, Dr. Mikan, Mr. Natterer, assistant in the Museum, and Mr. Schott, as gardener. The Austrian naturalists were joined by two Bavarian academicians, Dr. Spix and Dr. Martius. Dr. Mikan was hindered from penetrating into the interior of Brazil, but he made very important observations and discoveries in natural history, in the environs of the capital, and enriched the Imperial Museum at Vienna by highly valuable additions.

Professor Pohl, more fortunate than his colleague, penetrated into the interior of Brazil, and even reached some parts which had never been visited by a European naturalist. In September, 1818, he left Rio de Janeiro for the province of Goyaz, and arrived on the 22nd of January, 1819, at Villa Boa, its capital. Even on this first expedition he made the most curious and important discoveries. The rainy season having just set in, he was obliged to remain three months at that place; but made excursions to the rich gold district of Serra d'Ourada, and also to the Aldea S. Joze, where Cayapos Indians are civilized. On the 25th of April Dr. Pohl quitted Villa Boa, and turned northward towards the equator, by way of Barra, St. Ritta, Trahiras, St. Joze do Tocantines, St. Joao da Palma, and as

south of Rio, which, however, as his collections prove, abounded in interesting results towards the knowledge of those parts. Mr. Natterer has, we understand, been since more fortunate, and, as he has been seven years in Brazil, there is no doubt that on his return, which is expected by Christmas 1824, he will bring an ample harvest of novel and interesting accessions to every branch of the natural history of South America.

The accounts of the proceedings of the Bavarian naturalists Drs. Spix and Martius, were impatiently expected, and the first part of their travels, already published, has given great satisfaction; but the sequel will be far more important, as it will comprehend their voyage on the river of the Amazons, and their description of a vast tract of country, our knowledge of which has hitherto been extremely imperfect.

At the same time with the Austrian and Bavarian expeditions, Mr. St. Hilaire, a Frenchman, visited not only Brazil, but also the more southern countries on the Paraguay and La Plata. On the 1st of April, 1816, he set out for Rio Janeiro, in the suite of the Duke of Luxemburg, at that time French ambassador at the court of Brazil, and immediately undertook a journey to Minas Geraës and Bahia, from

which he returned to Rio in March 1818. In the course of the same year, he made an excursion to the north of the capital, along the coast, as far as the Rio Doce, and came back in November. In January 1819 he commenced his third and most important tour. He first went to the more eastern parts of Minas Geraës, which he had not before explored, and visited the grand waterfall, which is indebted for its origin to the Rio San Francisco. From hence St. Hilaire went to the province of Goyaz and its capital Villa Boa, and passed several days among the Coyapos Indians. He then repaired to the frontiers of Matto Grosso, returned to Villa Boa, and took a southern direction to San Paulo, where he arrived in November 1819. Leaving his collections at this city, he continued his journey towards the south, behind the great chain of mountains, along the coast. After visiting the cities of Sorocaba, Hytu, Portofeliz, Itapitininga, &c. he came to the Campos Geraës, remarkable for their fertility, fine pastures, and Araucaria forests. From Curitiba he descended the frightful Serra de Paranagua, and thus reaching the coast, visited the islands of San Francesco and St. Catherine, and also the settlements for the whale fishery. St. Hilaire then proceeded along the sandy and flat coast, inhabited

only by sea fowl, to Rio Grande, where he passed the winter (that is, the months of July to August), which he found to be pretty severe here under 30° of latitude. In the spring of 1820, (that is, in September, the same year), he left Porto Allegre, crossed the frontiers of Brazil, visited Rocha, San Carlos, Maldonado and Montevideo, and traversed the beautiful plains which bound the Rio de la Plata. On the other side of the Rio Negro, he came to a thinly populated country, and every where recognized the fidelity of the description which Azara has given of these parts. Between Belem and the province of the missions, St. Hilaire's journey became more fatiguing; he spent 13 days in a desert, where there was neither a house nor a beaten road, but only ostriches, stags, and jaguars. He and two of his companions nearly fell victims here to the effects of poison, in consequence of eating honey, made by the wasp, called lecheguana. He then visited the seven villages, which alone remain of the 30, founded by the Jesuit mission in Paraguay; returned to the province of Rio Grande, where, during the rainy season, he was in great danger of losing all his collections, and at the end of the summer 1821 arrived again at Rio Janeiro. Having once more gone to St. Paulo, to fetch the collections which he had left

there two years before, he embarked in June 1822 for Europe. St. Hilaire's journey is particularly valuable for the information respecting the natural history, statistics, and commerce. He has brought back 2,000 birds, 16,000 insects, and above 30,000 plants.

We have also learnt some particulars respecting Patagonia. A French captain, of the name of Gautier, went, in the year 1820, to the coast of this country on the sea lion (*phoca elephantina*) fishery. This fishery, which is very lucrative, and less hazardous than that of the whale, has hitherto not been so much known as it deserves, and is carried on by only a small number of Englishmen and Americans, who have prudently been silent on the subject. Gautier found that the coast of Patagonia is very incorrectly laid down on all our charts. During a three months' stay in these parts, he had many opportunities of making himself acquainted with the Patagonians. He also confirmed their great stature, which he states at six feet, Paris measure. What may perhaps have given rise to the well known exaggeration with respect to this people, who have been represented as a race of giants, is probably, he says, the fact that the Patagonians, when they hold intercourse with European ships, always choose the tallest men, who may very well be a

few inches above six feet. They worship the sun and moon; and when a person dies, all his effects, even his horses, are buried with him. The Spaniards in Patagonia (the chief settlement, with a Spanish garrison, at the time consisting of only the governor and the drummer, as the twelve men, of which it was formerly composed, had all deserted) assured Gautier that the whole number of Patagonians did not exceed 7,000 or 8,000 souls; which Gautier does not, however, think probable. The country abounds in fallow-deer and Guinea fowl, and the sea in fish.

In North America many new discoveries were made, and much done to correct the geography of that country, by Franklin, whose journey we have already mentioned.

Equally important information on the interior of these countries was afforded by Schoolcraft's account of the great lakes of Canada, and of the countries about the sources of the Missisippi. He accompanied, as mineralogist, the expedition sent by the government of the United States, under Governor Cass, in 1820, to these parts; and his journal is a rich fund of the geology of North America. The chief sources of the Missisippi are the Sandy, Bush, and Tortoise lakes. The former only was visited by the expedition. The *climate* is here so very cold, that, on the evening

of the 19th of July, the boats were encrusted with thin ice, and the thermometer, at sun-rise, was only at 36° Fahrenheit. Schoolcraft estimates the height of the sources of the Mississippi above the level of the sea to be 1,330 feet.

Another journey, which was undertaken in 1819 and 1820, by order of the minister of war of the United States, under the command of Major Long, from Pittsburg to the Rocky Mountains, was likewise of much benefit to the sciences. Several men of learning accompanied it; one of whom, Mr. James, the mineralogist, has published an account of it.

We may expect farther information respecting these parts of the interior of North America, from a society lately formed on the upper Missouri. Its object is to obtain a more accurate knowledge of the rocky mountains. It is composed of robust well-armed men, and was to attempt first to proceed from the sources of the Columbia to the ocean. Expectations are entertained that this expedition will extend the fur trade.

Some accounts, but far from satisfactory, have reached us respecting the interior of New Holland. The two expeditions which were sent from Sydney, in April 1817, and in May 1818, under the direction of Mr. Oxley, to examine the country beyond the *Blue* Mountains, had at last

begun to clear up the obscurity which envelopes the interior of this continent. The zeal of the English was animated by this success. In 1820 Mr. Throsby undertook a new journey across the Blue Mountains; but instead of going, like his predecessors, to the west or north-west, he turned to the south, and discovered here an immense tract of beautiful pasturage and forest, and also three rivers, which had a westerly course. Throsby also discovered a lake 30 miles in length. The natives called it Lake Warrewan, and said that it fell into the sea towards the south. There was an abundance of lime, sandstone, granite, and slate. The mountains which he saw to the south of the great plain, extending westward, had not an unfruitful appearance, but were overgrown with wood. His tour extended as far as Jervis Bay, on the southern coast. In the year 1821 Lieutenant Johnstone was commissioned to inspect the coast lying to the south of this bay, and to discover whether any river in that tract fell into the sea. He was fortunate enough to find, at the back of Bateman's Bay, the mouth of a beautiful broad river, extending 25 miles into the land, and from five to seven fathoms deep. For the first fifteen miles on both sides of the river, the country was thickly wooded; farther on it became lower, and more adapted to agriculture.

BOIE'S TOUR IN NORWAY.

Mr. F. Boie, member of the Danish tribunal at Kiel, undertook, in 1817, a tour in Norway, with the intention of making observations on the birds of that country, particularly the numerous sea-fowl on the western coast. Though his journal, published in 1822, chiefly relates to natural history, especially ornithology, yet it contains a number of interesting remarks on the country, manners and customs of the people, which we extract for the gratification of our readers.

Our author and his companion, Lieutenant Von Wöldike, set out from Copenhagen in April, with the intention of proceeding by land through Sweden. At Helsingborg they purchased, at a very low price, a light waggon, of wicker-work, in which they travelled through Schonen and Halland. Mr. Boie, like many other travellers, found the accounts of the waterfalls of Trollhättan to be partly exaggerated. In the Album there were many complaints of disappointed expecta-

tions. They examined with much attention the remarkable sluices and the canal made through the rock, 22 feet broad and 11 feet deep. It appeared to them a defect that the sides of the canal are not smoothed, so that irregular pieces of rock here and there project. The five sluices, too, succeeding each other, let a considerable quantity of water escape in several places. Our travellers were so fortunate as to arrive just at the moment when some ships laden with timber passed the canal, from one sluice into the other, from the amazing height of 120 feet.

They arrived at Christiania on the 12th of April: on the road to that city they had to pass through deep snow, some of which had but just fallen. The environs of this capital of Norway may be compared to those of Geneva, and are adorned with numerous country houses, which are a very agreeable residence in summer. At that time the fiord or bay was still covered with ice. The university, which was founded of late years, while Norway was still subject to Denmark, had already acquired considerable funds by the voluntary contributions of the citizens; and the library contained 70,000 volumes, a great part of which, a present from the king of Denmark, had been sent even after the cession of Norway to Sweden.

The mode of travelling in Norway, at least in

the southern parts, is quite similar to that which is so highly praised in Sweden, and the burden of furnishing post-horses is said to be even more uniformly divided among the subjects in Norway. In pursuance of the ordinance of the 6th of June 1816, which contains the latest regulations upon the subject, there are stations on the high road, at distances of one to two Swedish (five to ten English) miles, where two persons, whose functions are but seldom combined in one, have to attend to the travellers; they are the landlord, and the postmaster, who takes care to provide post-horses, by signifying to those inhabitants whose turn it is to repair to the station: if any one comes too late, he is liable to a fine; and, on the other hand, the traveller who makes the driver wait above an hour and three-quarters, is obliged to pay him, besides the legal fare, an additional sum for waiting. At every station the landlord presents the traveller with a book, kept for the purpose, in which he writes his name, and the road he intends to take, as well as any complaints that he may have to bring forward. Among these, however, no mention is to be made of slow driving, which is the traveller's own fault, he being at liberty to urge on the horses himself. The book is laid before the bailiff, as chief of the police, on stated days, and according

to what is entered in it, and the depositions of the landlord, he punishes those who have neglected their duty. If the traveller forces the horses to unreasonable exertion, the landlord on the next station shall refuse to forward him on his journey, until he has agreed with the driver. On the station, the traveller is obliged to wait for horses one hour if the drivers are a quarter of a mile distant, two hours if half a mile, and three hours if the distance is one mile.

Travellers can have saddle or carriage horses, a car or sledge, but no carriage, properly so called. For the sake of convenience and expedition it is advisable to send a messenger before, or else a mere notice, which is transmitted from one station to another, so that the traveller finds the horses ready on his arrival, and can proceed on his journey without delay. By this arrangement it is possible to travel, when the roads are good, that is in summer or in winter, about 12 Norwegian miles in one day, and consequently to perform the journey from Christiania to Drontheim in five or six days.

From Christiania they proceeded by roads covered with snow, bordered, on each side, by eminences overgrown with firs. At Hundorp they obtained a room in the first story of a house built expressly for travellers, where they passed their

time very agreeably in conversation with the landlord and his wife, who took their meals with them. The author praises the cordiality of the inhabitants of these parts, who have at the same time a nice sense of propriety, and the greatest civility. Both the man and wife here first addressed the travellers with *thou*, and the people of this valley (Guldbrandsdalen) seem never to make use of the plural *you*, in speaking to a single person. Here too, as on the former stations, Mr. Boie had some difficulty in settling the account with the landlord, it being considered rude to make out a bill. When he at length paid, part of the money was returned to him, because, as the landlord expressed it, he had been treated also by the travellers.

Mr. Boie and his companion, after passing a mountainous tract covered with snow, where they were frequently obliged to alight in the most dangerous places, and crawl on all fours, arrived, towards the end of April, at the manor of Tofte, on the river Lougens Elv, which is inhabited by a descendant of the ancient northern Jarls: his family name, Paul Bath, was changed into Paul Tofte, it being the custom of the country to call a landholder by the name of his estate. The interior of the wooden house, such as are every where met with in the country, was decorated

with carved work, in a manner suitable to the wealth of the owner; and the furniture of the rooms was ornamented in the same taste, and painted with a variety of the most glaring colours. The best domestic utensils, silver spoons, and, in particular, a quantity of English earthenware, were ranged along the walls. Instead of stoves there were, in most of the rooms, only open fire-places. The host was distinguished for his good manners, and was dressed in stuffs of his own manufacture.

They made the first shooting party in pursuit of the white partridge, in Jerkin, before Drontheim, in the mountains of Dovrefield. The grandson of the host served as guide. He carried a fowling-piece of his own manufacture: he was dressed in a grey jacket, and had on green stockings and very thick shoes. A green cap concealed the greater part of his face: round his waist he wore a girdle, from which hung suspended an elegantly carved reindeer bone, to which he fastened the game. He also had on a pair of snow shoes (*sky*), of which, the one for the right foot might be about four ells long (eight feet English), and the one for the left half that length. "We soon," says Mr. B. "lost sight of the manor of Jerkin, and we saw ourselves surrounded on all sides by a tract of dazzling white snow,

extending farther than the eye could reach, which covered the undulating desert. The summits of the Snehätten, and peaks of other mountains of grotesque forms, towered n the distance: and close to us was the top of a beech buried in the snow. The frozen snow broke in with us from time to time, while our guide, infinitely quicker than we, by the help of his snow shoes glided over it, with the rapidity of an arrow, when we went down-hill, and with sufficient speed up-hill, describing a zig-zag like a ship tacking: when we came to a naked rock he carried his snow shoes, which are exceedingly light, under his arm."

When the travellers were returning homeward, all objects appeared quite indistinct, from the effect produced on their eyes by the reflection of the sun's rays from the snow; and their faces remained swollen for several days. The copper-coloured complexion of the men of Jerkin, who resemble the American savages, is also a proof of the keenness of the air in the Dovrefield. The women were fairer, without being remarkably pretty, though, like most of the females of the Guldbrandsdalen, they are distinguished for their bright golden hair.

They were now in the month of May, and their progress among the snowy mountains became

more and more difficult. After leaving Jerkin they could make no farther use of their carriage, and the upper part of it was placed upon a long sledge, the wheels on another, and Mr. Boie and his companion were in a third and fourth. They continued their journey in the same manner to Drivstuen, and the travellers were obliged themselves to lead the horses that drew the sledges. A very short distance beyond Kongsvold they reached the Driva, which there falls into the sea, and the frozen bed of which affords a road in winter time, while, in summer, you have to go over the Vaarstin, a pass which has been formed by means of gunpowder in the steep side of the rock, often several hundred feet above the bed of the river.

"We now," says Mr. B. "proceeded rapidly over the ice into a frightful chasm, when we suddenly heard a violent crash, and the front horse was precipitated into the water; the sledge followed with the driver, who, however, soon extricated himself. It cost the horse incredible efforts to recover its footing, and the others had to make equal exertions. Our luggage would have been wet through if we had attempted to take the same way; the sledges were therefore obliged to go along the right sloping bank of the river, over large masses of rock that strewed the passage,

which was not five feet broad. The same circumstance occurred several times, and we knew not whether we should most admire the sagacity of the horses, or the address of the two people who attended us." . . . . . .

"We did not reach Drivstuen, distant only two miles from Kongsvold, till eight o'clock in the evening. Greatly fatigued with the exertions of the day, we soon fell asleep, but rose early the next morning to pursue our route. The cordial exclamation of 'A happy journey,' or 'God be with you', with which we were saluted on our departing, appeared to us, henceforward, not to be an empty form; and we had learnt to comprehend that this custom, which, in countries where intercourse is attended with less danger, falls into disuse, is naturally retained here. The bed of the Driva again served us as a road; and as we kept continually descending, we had to anticipate a repetition of the difficulties of yesterday. We willingly adopted the advice of taking a fifth sledge, to avoid passing over the ice with too great a burthen: in fact, considerable tracts in the middle of the river were open; but the bed was wide enough, the horses being driven as quick as possible past such openings to allow of our proceeding on the declivity of the ice towards the banks of the river. It will not

be thought surprising, that on such a road the sledges were frequently overturned; added to this, the ice broke several times, and the horse that drew the foremost sledge was at one time up to the back in water. It seemed as if the horses had a presentiment when the ice was not strong enough to bear them; at least, before it broke in, they gave repeated signs of uneasiness: they were all powerful animals, and one in particular of remarkable beauty, with very slender feet. The horses of the valley are, in fact, celebrated throughout the whole country, and fetch proportionably high prices."

This then is the mode of travelling in the south of Norway, in the beginning of May.

At Drontheim our travellers were treated with great hospitality by the family of Mr. Knudson, counsellor of state. One of his sons accompanied them to the celebrated waterfall of Leerfoss, which is formed by the Nid Elve in the vicinity of this city. It rushes from a height of 70 feet with a considerable mass of water; and the environs are extremely romantic and picturesque. A fall of earth occurred above this waterfall in 1816, and buried a church, the adjoining farm, and several people; and the clay walls washed up at the mouth of the Nid still bore testimony to this event. The snow lay in the streets of

Drontheim, and in the progress of their journey they found in the mountains masses of snow sixteen feet deep.

The tract from Drontheim to Nummedalen is esteemed one of the most fruitful in all Norway; this was testified by the appearance of the dwellings. The rooms were more cleanly and spacious than our author anticipated. The custom of strewing the floor of the room with small twigs of pine or juniper, instead of sand, which the travellers had before observed in Sweden, and in the diocese of Christiania, was universal here. The appearance of the inhabitants corresponded with that of their abodes; some are remarkable for their knowledge and sound judgment. The drivers, on the other hand, are very troublesome, by their incessant questions. "What countryman are you? how old? are your parents yet alive? are you married?" and so on ad infinitum.

The inhabitants raise corn sufficient not only for their own consumption, but also for sale. They derive more profit, however, from their cattle, notwithstanding the difficulty of procuring fodder for their cows, sheep, and goats, of which last they keep great numbers, to maintain them during the nine winter months; but the vicinity of the city, and the facility of the communica-

tion by water, must animate the zeal of the peasants.

From Aargad they were obliged to continue their route by water. To the extremity of Finnmark nothing is used at sea but what are called the Nordland boats. They are built of various sizes, denominated according to the number of oars, four, six, eight, and ten-oared boats. A four-oared boat is so small that it can hold only two people, and these are, therefore, used only in the fishery close in-shore. A six-oared boat is larger, and in one of eight oars the Nordlander thinks he can defy a stormy winter; for which reason they are chiefly used in voyages. The length of one of these vessels is about 16 Paris feet, and two rowers, sitting on the benches, are able to take in each hand one of the oars, which are exceedingly light. The end, prow, and keel are very sharp, and a single sail occupies almost the whole length of the lofty mast, to which it is fastened above by a transverse piece, circularly hollowed out in the middle, with which it may be raised and lowered. The planks, and also the cross-beams, are uncommonly thin, and hence the whole vessel is, as it were, pliable, and so light, that a few hands are able to draw it ashore and bring it into the boat-house, of which every farm has one; without which precaution the boats

would be lost on the rocky coast in sudden gusts of wind or a hollow sea; for an anchor does not easily take firm hold among the marine plants that cover the cliffs. These boats, are celebrated as being the quickest sailers, particularly with a side wind. If the construction of the vessel, the edge of which is hardly a finger's breadth above the water, inspires the traveller with apprehensions, the disproportionably large sail gives him hopes of making a considerable way in a short time, and he need only cast a look on the cool, resolute air of the sailors, to dispel all uneasiness.

Farther northward the common farm-houses assume a very different aspect. In the south of Norway it is the custom for every house to have a porch, though sometimes covered only above, from which you enter into the sitting room, which often indeed serves as the kitchen, and contains the loom of the wife. Here, in the north, there is no separate sitting room, and the whole is more confined, and uncleanly. The only exceptions are the cheerful dwellings of the innkeepers, with their numerous windows, the exterior of which gives a promise of their internal neatness.

At Seyerstad, on the 19th of May, Mr. Boie asking for his reckoning, the mistress of the house led him to the window, and pointing to the sea and to the surrounding fields, said, "So long a

the land gives us corn, and the sea fish, no traveller shall be able to say that we have accepted money of him."

Four sailors were engaged to manage their vessel. The oldest, a man of venerable appearance, took the rudder, and a younger, according to the custom of the country, stationed himself in front, on the edge of the boat, to act as a counterpoise to the gusts of wind, which frequently threatened to upset it. The travellers seated themselves at the stern, admiring the beauty of the surrounding scenery.

At Foldereid the author had an opportunity of learning how irregular, yet quick, the course of the post is in these northern countries, and how seldom they are visited by travellers. A person who arrived at Seyerstad soon after his departure, had heard that he intended to go to Hundsholmen, in Salter's Fogderie, and wished to give him some commissions. He therefore followed him to Lougen, and thence to Foldereid, and had to encounter the same difficulties of the passage by water. On his awaking on the morning of the 21st of May he found him writing in his room. He took his letters, and accompanied him as far as the fiord, where he immediately embarked for Seyerstad, a distance of at least ten German (45 English) miles.

The difference in the appearance of the untry here and at Drontheim was very re-arkable, though it was but one degree far-er northward. There the shore gradually ing on both sides to the mountains, nume-us farm-houses, roads, trade, and a busy pulation—here only sterile masses of rock, ing perpendicularly from the water's edge, a ath-like silence, very rarely a farm-house or man beings, who have no opportunity to com-unicate with each other, and who extort from e sterile soil a scanty subsistence. The seed is jured by the night frosts, and the sea fish do not me up so far. This latter circumstance ex-lains why the people in the north rather live on e bare sea-coast than in the interior, where no-ing is to be obtained but wood. Even the map ews the great difference in the population of ese tracts. About Drontheim how many names hamlets do we see, though they are not all arked; here are only the names of lakes and cks, unknown even to the inhabitants of Folde-id, which has no inhabited place near it, either wards the west, or to the frontiers of the Swedish sert of Umea Lapmark.

The corn is partly ground at home; of rye our they prepare a soft pudding, which is the ily food of the Norwegian peasant, and of the

Brodkorb, and esteemed the finest estate to the north of Numedalen. Few houses even in Drontheim can be compared to this truly magnificent mansion. The travellers begged the servants not to awake their master, and though strangers and quite wet, they were shewn into the very elegant drawing-room, where they passed the remainder of the night, regretting this new delay; for Mr. Boie feared that he should be compelled to stay longer than was convenient to him, recollecting an anecdote related of the deceased possessor of Forviig, who once caused the rudder to be taken from the boat of a stranger, in order to keep him with him till a new one could be made. At breakfast the travellers were introduced to the family, consisting of the owner of the island and his son, who was also married.

They were much amused with the operations of the thievish arctic birds, which compel other sea fowl to resign their prey to them. Scarcely had a sea gull or a sea swallow got a good prize, when the ominous "Io" sounded from a distance, the doleful cries of the pursued mingled with it, and the robber was at hand. The combat was not of long duration, for the latter, rapid as lightning, attacks the poor object whom he has selected, biting him above and below till he drops the fish, which, before it is half way to the surface

of the water, is seized with wonderful dexterity by the assailant, who bears it slowly to his retreat.

Mr. Boie and his friend, with Messrs. Lossius and Berg, possessors of the farms of Söviig and Kaaperdaal, set out from the farm of Kaaperdaal in Löötland in the beginning of June. These gentlemen were to collect the tithes of the winter fishery, and as they were every where well known, they were very welcome companions to our travellers. On the 6th they entered the polar circle. The following are some general remarks on the bailiwick of Helgeland.*

The vallies are very narrow, and have no communication whatever by land. There is not even always a path from one farm to another, and the neighbours are obliged to visit each other by water. The greater part of the interior of the country consists of naked rocks, most of which are covered with snow through the greater part of the year. The shores of the fiords, which run deeper into the land, begin to be wooded at the distance of some miles from the sea, and these

* Norway is divided into the dioceses of Christiania (or Aggerhuus), Christiansand, Bergen, Drontheim and Nordland. This latter is subdivided into Nordland and Finnmark, the former of which is composed of the bailiwicks of Helgeland, Salten, and Lofodden.

woods continue along the banks of the rivers which empty themselves into the fiords. On the two greatest fiords, the Vessen and Ranen, the forest is said to be immense, and as far as that goes, the limits of the farms also extend. Many land-owners do not know where their estate terminates towards the east. The islands next the sea are much more inhabited than the fiords, and it is here only that agriculture can be carried on to advantage. The snow continues to lie in the fiords till seed time, and the autumnal night frosts set in regularly in August. But it is not only the more favourable situation for agriculture which gives the advantage to the naked sea-coasts and islands, but still more the productive fishery, which in these parts is, as it were, the centre to which all the exertions of the inhabitants are directed. The land-owner exchanges his fish for the necessaries and luxuries of life at Bergen, and in the same manner he pays for the fuel, boats and furs, which latter he again exchanges with the Russians, when they visit Finnmark, on account of the fishery.

On the low tracts of mountains (field), bare of forest, the farmers drive their herds of cows, goats, and sheep, to pasture during the summer, and sometimes dwell there in huts; but the higher parts of the mountains are occupied by the Lap-

landers, who pasture their reindeer here in the summer, and descend to Swedish Lapland in the winter. They alone are acquainted with the mountains, and have given names to several places. Young Finns sometimes are in the service of the farmers in the valley, but they always return to their former mode of life; and there is no instance of their having properly settled in the valley.

Helgeland contains 1283 registered estates, and as the number of estates which one person may possess is not limited, landed property is distributed in a remarkably unequal manner. Counsellor Coldevin at Dönnes, for example, is possessor of six hundred estates, and Mr. Brodkorb, at Tiötöe, of nearly the whole Boygd of Vessen, (i. e. a series of estates on a river or fiord.) The law has, however, provided that these estates shall not remain uncultivated, the owners being obliged, on penalty of paying triple taxes, either to inhabit them themselves, or to let them to others. The lessee, on taking possession of the farm, pays a certain sum agreed upon to the owner, and then only a trifle annually. Taxes are collected by the royal bailiff. In general several farmers hire an estate in common, inhabit houses standing near each other, are then called neighbours, and receive each a portion of ground

for their use. The lessee inhabits the est during his life time, and after his decease widow, as long as she does not marry a seco time. If, however, he dies immediately after t contract, without leaving a widow, the sum p belongs to the owner of the estate, and the he of the deceased are not indemnified for any i provements. Such a tenant has also a right cut wood at pleasure in the forests belonging the estate; and considering the small amount the taxes, the advantage seems to be greatly his side. The timber trade, however, is not co siderable, and the land-owners cannot expe any demand, except for the neighbouring islan which are poor in wood.

Helgeland, in the ecclesiastical division of t kingdom, is a priory, and the chief civil offic is the bailiff of Nordland. The administrati of justice, which is vested in the actuary, is s parated from the civil government, and the t bunal sits three times a year in the seve courts. Before disputes are judicially decide the parties are obliged to appear before the ar trator, and they may appeal from the sentence the actuary to the supreme judge, of whom the is one for Nordland. The feudal tenants are t lowest officers to whom the bailiff has a right give commissions in the affairs of civil admin

tation and police, as the actuary has in legal matters. They are exempt from several taxes.

An important class of the inhabitants of the country are the tradespeople, who have the exclusive privilege of supplying the inhabitants of certain districts with the necessary goods. The province does not carry on any trade, except with the Russians, with Drontheim, and still more with Bergen. Here and there are some owners of yachts, who make two voyages in them to Bergen in summer; and to them the peasant gives his dried fish to be disposed of, on payment of a certain commission, for flour and other goods, or for ready money.

Near Rödöe they saw an extraordinary number of eider-ducks. At Svinevaer, the females had their nests in the piles of timber near the house, and they allowed any one to come near enough to observe them. They were informed that in some farm-houses in the neighbourhood they hatched in the kitchen, and suffered themselves to be stroked when in the nest. The travellers were begged not to shoot here, and in fact shooting an eider-duck is prohibited under a penalty of ten rix dollars, which is not, however, insisted on every where.

Another phenomenon among the birds of these

parts was the sylvia trochilus,* which poured forth its melancholy notes on every cliff where there was but a sprig of birch, and, in fact, every where as high as the birch grows. "It is scarcely credible (says Mr. Boie) that this little bird should be able to bear the journey along this coast, over immense tracts of snow which cover the high country, and where it must perish for cold and want of food. We must therefore assume that it goes from bush to bush along the cliffs, which begin at the southern point of Norway. But with how many obstacles, even here, must not so little a creature have to contend, in showers of snow, and where rugged projecting rocks seem to require a long continued flight over the surface of the sea! There are problems in natural history, the solution of which demands a continued series of observations and long experience in the most remote places."

On the 7th of July the travellers were at Breivig, on the island of Vaeroe, the most southerly of the Lofodden chain, in about 67° 41′ N.

* Sylvia trochilus is not rare in Germany; it is 4½ inches in length, and of an olive colour; it lives in orchards, forests, in plains, and near streams, and feeds on insects and berries.

titude. A person, as Mr. Boie observes, may obtain a very correct idea of the northern coast in general, by supposing a mountain half immersed in the sea, with its extensive vallies. Should the land, which now forms the chain of the Lofodden islands, be once raised higher above the surface of the sea, the spaces which are now between these islands would resemble narrow dingles of one and the same chain. Every thing here wore a more dreary and inhospitable aspect; the eastern shore of the island of Vaeroe, with the exception of the lichen saxatilis, was destitute of all vegetation, and presented a picture of the most frightful desolation. Several families, notwithstanding, reside here, and the Lofodden are among the most important districts in the kingdom, as the fishery collects and enriches so many people.

Though it was the end of June, the way to the Lofodden was very troublesome, on account of the snow, rain and storms. The houses of Stamsund, which are entirely surrounded with dried fish, are built on the fallen fragments of rocks. There was no trace of agriculture. A rocky ridge, of about 300 feet in height, rises from the shore immediately behind Stamsund. Our travellers ascended it, and found on the top, in the middle of a marshy plain, a still half-frozen lake, on the

sides of which grew stunted birch trees. The valley was defended on the south by steep rocks, and they did not succeed in their attempt to penetrate farther. A Nordland yacht from Helgeland was lying at anchor at Ramsvick, in the bay of Buxnes, to take in a cargo of dried fish. Our travellers visited this singularly built vessel, which was particularly remarkable on account of the peculiar proportion in the length of the single parts. The mast was six Paris feet in circumference, the length of the yacht was 60 feet, and its breadth 30 feet. Without a compass, guided alone by his knowledge of the coasts, the Norwegian sails in such a vessel to and from Bergen, carefully avoiding the open sea, as the thin planks of so frail a vessel could not resist the more powerful waves on such a long voyage. It had no deck, and could carry a cargo of 10,000 vog* of dried fish, which were piled up half the height of the mast, and fastened in layers with nets.

It may be readily conceived, that in these northern countries, where all journies must be performed by water along the cliffs, not much attention is paid to the number of miles, as the apparent distance of the places, and the time they

* The Norwegian vog contains 36 pounds—the Russian only 30.

oing from one farm to another, depend on the wind and weather. Mr. Boie sked how far it was from Stamsund to t, was answered, half a mile. It how- them above two hours. Towards the utumn the sun fish* (squalus maximus) n these parts, in some years very abun- nd this fishery is very lucrative. An of a very peculiar construction is used them. It is fastened to a line 300 long. When the wounded fish, which rwise be easily and safely approached, line very tightly, it loosens the head a foot in length) from the wood to which htly fixed, and though a chain fastened ddle doubly unites it with it, its weight er able to draw the iron out of the body n. The latter wearies itself, and is at last h lances.

oe, Budoe and Kerringoe, the travellers found the rooms heated; but at Stam- ere there were even night frosts, they ged to have fires: they were also obliged ne at Ramsvick, which was made with od fetched from the bay of Ofoden,

form, blackish grey fish, of the shark kind, eet in length, 16 feet in circumference, and ut 160 cwt.

though the island itself was in no want of an excellent fuel, viz. a very solid turf. The Lofodden are sometimes visited with very severe earthquakes. The inhabitants show strangers large blocks of rock which have been thrown down at different times, among others, in November, 1816, when six successive earthquakes inspired the inhabitants with the greatest apprehensions: and the same abodes on these coasts, which are every moment threatened with being buried under the projecting masses of rock, are covered, in storms from the south-east, with the spray of the sea.

The farm of Reine, on the island of Moskenöe, has a very peculiar situation. Surrounded by terrific masses of rock, there is a lovely verdant spot, about 1000 paces in length and 400 in breadth, with substantial buildings; and over these again rocks piled upon rocks, looking like steps, to an abyss situated 500 feet higher, environed by frightful, black perpendicular rocks, above which the snow lies, and two immense peaks rise pyramidically more than 2000 feet above the level of the sea. The owner's wife, who had died a short time since, was buried near the church, or more correctly speaking, large and small masses of rock had been thrown on her coffin, which had no other covering. This (says

Mr. Boie) can hardly be called depositing in the peaceful bosom of the earth. The farm of Sund, on the coast of Flagdastöe, and which is also considered the principal estate on the Lofodden, has the same melancholy situation. Mr. Boie was surprised how people could think of forming a settlement here. This farm lies in a chasm dreary beyond description; there was space for only four buildings, and it had been necessary to build two other houses, belonging to the farm, over the sea. A garden, which the travellers saw on landing, was of itself a phenomenon in those parts, but doubly remarkable from the singularity of its formation. They had laid boards over an old boat, covered them with earth, on which grew parsley, cresses, and, even as an ornament, some chrysanthemum. They happily accomplished their passage over the dangerous whirlpool of the Malstrom, on the 27th of June.

The island of Mosken affords a proof to what a degree cattle are rendered too delicate by excess of care in more southern countries. On the high slopes of this island about 150 cows and oxen, and a great number of sheep, live throughout the whole year, without suffering from the inclemency of the winter, almost in a wild state; and in winter, when they are the fattest, there is no means of reaching them except with a gun. As the snow

does not lie long on the island, it is possible for the cattle to find sufficient food, and it is even said that they increase; only the young cattle soon become a prey to the eagles. It is reported, that in violent storms the whole herd, with the largest animals in front, place themselves on the extreme projection of that side from which the wind comes, and thus resist its force.

The following is an example of what human nature can bear in these climates. In November 1814 or 1813, John Frank, of Moskenöe, rowed to the numerous cliffs on the west of this island, and moored against one of them, to shoot sea otters. He went on shore, but probably neglected to secure the boat properly, as the remains of it were soon after found floating on the water; and it being supposed, of course, that he had perished, no difficulty was made in proceeding to the legal division of his property among his heirs. Nearly a month afterwards, a boat accidentally touching at the cliff discovered the unfortunate man, who without speaking a word immediately fell upon the provisions in the boat. He was dreadfully disfigured by want of food, yet still able to stand upright. The magistrates soon after visited this place, and are said to have taken down his statement in writing. He affirmed that he had lived only on turf, and snow, instead of fresh water, of

which there was none in this place. Probably, however, he had eaten also muscles and sea stars, of which there must have been some on a cliff some hundred paces in extent, but did not think fit to acknowledge it. After his delivery he was seized with a severe illness, but survived it four years. He is said to have been distinguished for a remarkably muscular make.

On the island of Vaeröe there are, in winter, an extraordinary number of sea eagles. They are at this season quite a nuisance, as the inhabitants cannot venture, on their account, to suffer the cattle to leave the stable. One of these eagles once attacked an old man upon the beach, and having entangled its claws in his jacket, was taken. In order to deliver themselves as much as possible from these ravenous guests, they build small stone huts, in which only a small opening is left after the hunter has concealed himself in it, before daybreak. The bait, a dead animal, or only a piece of meat, is fastened to a rope, which may be drawn in from the hut, which is done as soon as the bird has pounced upon his expected prey. This motion of the bait makes the eagle still more eager, it fixes its talons still deeper, and is at last drawn quite into the hut and killed. In this manner a single boy last winter caught six-and-twenty eagles, which may give some idea

of their number. Probably the great flocks of the white Alpine partridge cause them to remain in the winter in such northern latitudes, for all the sea fowl that breed here, except a few gulls, have already disappeared.

"We had hitherto observed only the sea fowl usual here in summer; and the buildings of Mosta, under the steep rocky wall, lay before us, when our attendants pointed out to us a dark stripe in the water, which they said consisted entirely of birds. This appeared to us quite impossible; but this streak now began to move, coming directly up to us, and we beheld a swarm of sea fowl, of the extent of which the reader may form some idea, when I inform him that I had time to fire my double-barrelled gun, and reload it ten times, before they had all passed. The birds occupied at the same time a breadth of at least 1000 paces; they did not, however, fly crowded together, but each by itself close behind the other; and the rapidity of their flight and small distance from us, for they passed not ten yards over our heads, at first made us so confused that we could not fire a shot. There were two or three such flocks in these parts, which when in the water suffered us to come very near them; and it is hardly conceivable how the mountains can afford breeding places for such an immense quan-

tity of birds, and yet we had only seen Alken and Langivien: ..... We now proceeded farther to the southern point of the island, and came to a deep cleft in the rock, which forms a cavern, where we could enter with our boat; and this, as well as the whole surrounding rock, which has numerous projections, is inhabited by the larus tridactylus, the three-toed gull. The nests, made of sea grass, almost touched each other, as high up as the eye could distinguish, and so low down that we could reach the undermost with our hands: the male and female sat close to each other, and were not disturbed by our firing. Swarms of them made whole cliffs appear as white as snow, and with one discharge of my double-barrelled gun I killed nine of them.

It is remarkable that these sea fowl return every year to the above described breeding place at Vaeröe, and that at the same time every species occupies the accustomed spot. The same phenomenon occurs also on Fuglöe and Lovunnen, Iverholt in Finnmark, on Röst, on the Greenland island of Orpiksank, to the north of Disko, and on the Vogelberg on the coast of Iceland. "We involuntarily ask," says the author, "what is the superior law of nature which determines these animals to give the preference only to certain rocky islands, before so many

others which appear equally suitable for their object. It is evident that so many birds living quite in the same manner, must increase the difficulty of finding food, and there must therefore be some peculiar reason that makes the same place so attractive to them all; for here, as in nature in general, there is certainly nothing accidental, and the naturalist cannot be satisfied with explaining it merely from the social disposition of these birds. A person must have visited all the above named breeding places, and by many years experience made himself acquainted with the food, and all other particulars of their mode of life, in order to draw correct conclusions. But with respect to Vaeröe, I think it probable that the situation of this island is agreeable to these birds, because, for reasons not exactly known, innumerable fish deposit their spawn here, and the young fry are an inexhaustible source of food. In this particular all the coasts of the Lofodden would be equally favourable for a general breeding place of this kind; but in Vaeröe, at least, the steep declivity towards the south which shelters them from the north and north-west winds, and the whole nature of the rock, with its numerous hollows and fissures, undoubtedly makes it doubly suitable.

When Mr. Boie and his companion were as-

cending the mountain ridge of Vaeröe, they met with another novelty, namely, a woman with two dogs trained for catching birds. She was chiefly employed in taking auks. The rock at this place, and at other parts of the island which the auk has chosen, is slate, which, in itself full of crevices, is hollowed out still more by the birds. Each of these holes, designed for one pair, is six inches in diameter, and from one to two fathoms deep, and there is no doubt that the bird digs them itself with the aid of its hard bill and claws. At the farther end of this hole the female lays one dirty white egg without spots, and of the size of a hen's egg, only more rounded at both ends. The dogs (in shape and figure like terriers, but with longer legs, and distinguished by a double claw on the hind toe) immediately recommenced their chace, the travellers having requested the woman, who was going home, to turn back with them; they saw the dogs disappear in the hollows, return with their booty, and again explore other holes. They have a hard struggle with the birds, which fight desperately with their bills and claws; and the woman, who keeps twenty dogs, affirmed that she had lost many of them that had not come out again. Well-trained dogs, however, bring the bird alive out of the hole, which, without injuring the skin, is killed by wringing the neck. The

declivity of the rock is partitioned out among the inhabitants of Mosta, who live almost entirely by bird-catching. They are eaten fresh and salted, and great as the consumption is, a very small number in proportion is killed; for the very places which are the abodes of the most numerous flocks, are inaccessible even to the adventurous hunters who are met with here. Many bird-catchers let themselves down by ropes at the steepest places, and it is no wonder that accidents sometimes happen. In fact, Mr. Boie was assured that the bird-catching on Mosta Field became every year more dangerous, because the rocks grow softer by the sharp dung of the birds, and are more undermined by them.

As our travellers were engaged one Sunday morning in preparing their bird-skins, &c. almost the whole population of Sörland and Mosta passed within six paces of their window, the rocks allowing no more space, to go to church at Nordland; all, without exception, put their heads into the door and called out, "Good luck!" "They are (adds Mr. B.) a harmless and, on land, a timid people, which we might have subjugated with as much ease as Jörgensen did Iceland.* The people all

* Jörgen Jörgensen, a private Danish soldier, was taken prisoner by the English, in the war of 1807, and was afterwards clerk to a London merchant of the name

paid the greatest respect to the most experienced marksman." The winter fishery at Vaeröe had been more productive in the last years than formerly, and the wealth of individual inhabitants had been much increased. A Drontheim boatman, who was just lying there at anchor, seemed to derive advantage from it, and disposed of goods of various kinds, particularly articles of luxury,

of Phelps. In 1809 he accompanied him to Iceland, to establish a commercial connection. The people of Reikiavik, the capital of this island, would not suffer them to put into the harbour, and the disputes arising in consequence became so serious, that Mr. Phelps took the Danish Governor of the island prisoner, and conveyed him on board. This, and also what ensued, was very easily accomplished, as Reikiavik was without defence, and the guns of the English ship might have destroyed the whole town. While Mr. Phelps remained inactive in his ship, Jörgensen set himself up for sovereign of the island, proclaimed the abolition of the Danish government, and commanded the Danes to remain in their houses, under pain of immediate death. Some of the natives were enlisted as soldiers, and the new Governor, or Protector, as he styled himself, began to seize on all property, public or private; for which purpose he made a tour through the island. His reign was, however, but of short duration. After the arrival of Captain Jones of the English sloop of war, the Talbot, he was deprived of his authority, and the Governor set at liberty.—*Vide Mackenzie's Tour in Iceland, in* 1810.

for which the natives showed a childish longing, brandy and even wine, the use of which has extended to these dreary cliffs. Mr. Boie observes, however, that many families in the Lofodden are deeply in debt to the privileged merchants of the district. From them they must procure their flour and other necessaries, in exchange for fish, and in these transactions the merchant, of course, fixes the price. In all the families they were busy getting in the turf, which Sörlandsmyren furnishes, of very good quality, and without which the island would not be inhabited.

Our travellers were prevented from visiting, on account of the stormy weather, the neighbouring island of Röst, to the west of Vaeröe, and the most southerly of the Lofodden chain; they were, however, enabled to learn some particulars respecting it from the parish clerk of Röst, who happened to be at Vaeröe at the time, to which, though of smaller extent, it has a great resemblance. It is 3¼ miles distant, and though the sea is full of breakers, like the Malstrom, only the common uncovered boats are made use of; yet the voyage is rather dangerous. The passage would be attended with less peril in covered boats; but their forefathers did not make use of them, and the present race does not wish to appear more timid than they. Besides this, drown-

ing is too general a circumstance for accidents at sea to make much impression; and as there are instances of persons having been miraculously saved from the most imminent danger, the belief in an absolute predestination has unhappily become too prevalent. According to the lists kept by the clergyman, above half of the deaths of the male sex, in the space of twenty years, had occurred at sea; and a remarkably melancholy event, which had taken place about twelve years since, was still fresh in their memory. At that time the male population consisted of 25 persons, of whom 16 had come to Vaeröe in five boats; as the wind was not favourable, they were advised not to return, but in vain—and all, without exception, atoned for their rashness with their lives, and left their families in the most deplorable condition.

On the 14th of July, at 11 o'clock at night, when the sun was still above the horizon, Mr. Boie and his companion, Lieutenant Wöldike, left Vaeröe and returned to the northern Lofodden, where they landed on the 17th, on the coast of East Vaagen. The parish of Vaagen is the same which the celebrated Hans Egede voluntarily quitted, in his pious zeal, to convert the heathen Greenlanders to Christianity. It is now considered one of the richest in Norway, as its revenues,

consisting chiefly of fish, are very considerable. Storvagen and Finesse are the two farms where the greatest number of boats assemble during the time of the winter fishery. People flock from all quarters, and the whole place is filled with fishermen and other strangers; for there are but few farms that have not, at least, some share in the fishing boats sent to the Lofodden. The number of boats is estimated at about 4000, and to each are five men, who are the most robust and expert seamen in the provinces. The fishery begins in the middle of January, and at Easter, according to the prevailing custom, they all return home. To accommodate this concourse of people, the fifth part of whom remain in Vaagen, wooden barracks are erected, in which the crews of several boats must make shift with one and the same hut, where they sleep, dry their clothes, and dress and take their meals. At Storvaagen there were whole rows of these miserable dwellings; but even then, all could not find room, but were obliged to sleep under their boats, turned upside down. All of them are forced to use their fishing dress, which is frequently quite wet, instead of a bed.

It seems at first inconceivable how people can endure such fatigues without despairing; quite the contrary, the fishermen look forward with pleasure to the voyage to the Lofodden, and

every body is eager for permission to be of the party. A closer acquaintance with the mode of life of the Nordlanders sufficiently explains this circumstance. They are inured, from their youth, to the greatest hardships at sea, and by living confined at home, are accustomed to bear the corrupt air of the rooms. Most of the houses are so arranged, that the kitchen serves at once for a sitting, dining, and bed room, and is besides used to keep the daily provision, and dry the wet clothes. The living in one of these barracks cannot therefore be much more uncomfortable, and the cold on the coasts is no where so intense but that it may be borne in a leathern jacket and smallclothes. On the other hand, the fishermen have the prospect of gaining in Lofodden by their fish, receive brandy in larger quantities, and fat dorsh livers, of which they spoke to Mr. B. with a kind of rapture, and exchange their ordinary insulated life for the company of many acquaintance in their leisure hours. They suffer, however, greatly, when continued storms prevent the boats from putting out to sea, which is frequently the case, and the whole assemblage of people crowded close together, must remain so long unoccupied. Yet with all this, the mortality is not very great, and most of the sicknesses prevailing here are the effects of intemperance. Yet in the

winter of 1816, in the space of nearly three months, which is the usual duration of the fishery, about two hundred people died, and were all buried in the church-yard of Vaagen.

On Sunday, besides the inhabitants of the vicinity, some parishioners from Hindöen also attended divine service in Vaagen; they were two men and one woman, who came to church for the first time, after her very recent confinement. These people had been obliged to perform a voyage of five Norwegian miles. Unfavourable weather often prolongs the journey to several days, and in that case they beg the clergyman's leave to pass the night at his house.

Towards the end of July, Mr. B. and his companion left the Lofodden, and sailed over the west fiord (the bay between the Lofodden and the continent) back to Salters bailiwick. At Hundholmen, where they arrived on the 2nd of August, they were struck with the Russian physiognomy of a troop of people, who were lying on some cliffs near the beach. They were in fact Russians, belonging to the crews of some Russian luggers, of which there were five in the bay at anchor; they resemble the Norwegian yachts, only they are more stoutly built, and have two masts. The cargo of these vessels, of which some more were still expected, consisted of rye

flour, closely packed in mats; and they receive in exchange fox and otter skins at very high prices; the value of the flour being estimated in silver, the otter skin costs from 5 to 8 dollars, and the skin of the cross fox also 8 dollars. On this occasion they did not enquire for bear-skins, or for the white fox, and ermine, but paid from 80 to 100 dollars in ready money for blue fox skins of the first quality. The high price given for the ill-looking grey-brown otter skins was very remarkable. According to their account they dispose of them to merchants at Archangel, from which place they are sent to Saint Petersburg, and thence to Moscow. Here they are first dressed, the tips of the fur gilt, which it is said cannot be done to any other skin, and then exported to Tartary and China. The valuable fox skins remain in St. Petersburg and Moscow, and if such high prices are paid for them here, at the second hand, it is no wonder that a trimming of blue fox is so extremely expensive.

Hundholmen is quite a new town, having been built in 1807. The commercial establishment, which was checked in its progress by the war between Denmark and England, which broke out immediately after its foundation, was sold by auction in 1817, at Drontheim. It was only in the first year that consignments of fish were made

direct to Spain; at the time of Mr. B's. visit, the only trade was with Drontheim, and with the Russians who visited the coast. The English settlement to which Mr. Von Buch's travels had given rise, had then existed about two years, and supplied the province with wine, hardware, and cotton goods, &c. which had never before been offered for sale in Salten, and the accumulation of which was considered, by many, as no advantage for the province. A secondary object of the English settlement was the exportation of dried fish to England; and in the summer of 1816, an attempt, which did not prove successful, was made to catch whales in the west fiord. Mr. Boie was assured, on the other hand, that since the year 1812, the Finns on the sea-coast have been more fortunate in the pursuit of these animals in the bailiwick of Tromsöe, and in Finnmark. They merely make use of harpoons without any line, and leave it to the wind and weather to throw the wounded whale on the coast. In order to prevent disputes, every fisherman is obliged to put a mark on his harpoon, which is inserted by the proper officer in the records of the court. Thus a person whose harpoon is found in a whale which is cast ashore, is considered as the lawful owner. This singular mode of fishing was, in the summer of 1817, the occa-

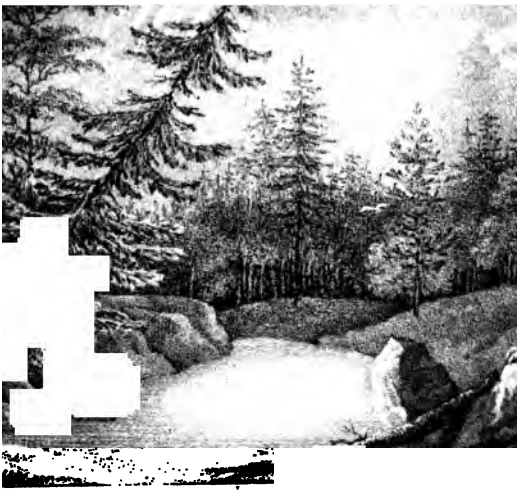
sion that a Finn offered to sell to a merchant at Tromsöe his claim to a whale which he thought he had mortally wounded. The merchant consented to the proposal, and a few days after the whale was in fact found floating on the water, and assigned to the purchaser. A considerable number of whales have been caught in this manner, but still more have been killed without being of any advantage to the fishermen. There are here no great equipments for the whale-fishery, as in Greenland, and this would not be practicable on the Norwegian coasts, as the whales have here too great room for escaping, whereas in the Frozen Ocean they are often so hemmed in with ice, that escape is impossible.

We here conclude our extracts from Mr. Boie's journal, who, as well as his companion, reached home in October the same year.

THE AURORA BOREALIS.

Dr. Schubert, a late traveller in Sweden, gives the following description of a very beautiful Aurora Borealis, which he saw in the province of Helsingland, in Sweden, which we copy, together with the plate, from his work:—

"On the 19th of September, I arrived at Delsbo, at near eight o'clock in the evening. At about half-past nine I had the pleasure of seeing a very beautiful Aurora Borealis, but was not able to perceive that it was accompanied with the slightest noise. The northern sky was brilliantly illuminated with bright varying rays, which moved alternately up and down in an oblique direction: they were sometimes white, then green, yellow, red, nearly resembling the colours of the rainbow; at one time they kept distinct from each other, at another they blended together, with the most lively play of colours, then separated again; and sometimes the whole seemed to stand still: the appearance was the most beautiful when dark clouds passed behind the rays, or the stars twinkled through them. It was not quite light enough to read, but about as light as when the moon is veiled in thin transparent clouds. It continued about an hour, but it frequently lasts through the night. It is sometimes more brilliant than when I saw it, but in general less so. It is seldom that a year passes without an Aurora Borealis, and then it is very frequent. On high mountains it seems to hover round the traveller."



ON THE CHANGES

IN THE

CLIMATE OF THE ALPS.

It is a general opinion among the inhabitants of the Alps, that their climate has, for a series of years, become more rough and severe. Wyss, in his Travels in the Bernese Oberland, adduces several examples in support of this opinion; for instance, that, on lofty mountains, where hardly a bush is now to be found, there lie large trees belonging to a remote period; that in the Valais, a stone bridge has been found on a glacier, at a place where there is now no access; that meadows, from which a century ago the finest hay was obtained, are now included in the regions of eternal snow, &c.

The Swiss Society of Natural History was induced, in the year 1818, to propose these changes in the climate of the Alps, as a subject for a prize essay. It required of those who should answer this question, principally to adduce facts, and chiefly—

1. As complete a collection as possible of the ancient and modern evidences, which may prove

the destruction and abandonment of ancient pasturages on the summits of the Alps.

2. A critical examination of the validity and authenticity of these evidences.

3. An accurate distinction between all those cases where ancient pasturages have become unfruitful, from other causes than the effects of cold —such as the decomposition of surrounding rocks, falls of mountains, avalanches, &c.

4. An examination of the historical evidences and natural traces, which are supposed to prove that the woods extended to a greater height formerly than at present.

5. A collection of as great a number as possible of observations on the elevation of the line of snow, and on the period when the cattle were obliged, in different years, to abandon the high Alps.

6. A collection of observations continued during a series of years, on the partial augmentation, or diminution, of the glaciers in the transverse vallies, on their commencement or disappearance in the high Alps. Lastly,

7. To search for and determine the ancient boundaries of certain glaciers, which are shown by the loose stones which they impel before them.

Mr. Kasthofer, chief ranger at Unterseen, undertook to give, if not a complete answer to the

prize question, (from which he was deterred by the extent of the subject, and the short time allowed,) at least contributions towards a solution. For this purpose he resolved, in the winter of 1819, to set down the results of ten years' careful observation of the high mountains of Berne. He would have wished, indeed, partly to correct his views, and to collect new facts to confirm them; but the season opposed insuperable obstacles to the accomplishment of his wishes. Mr. Kasthofer collected a number of chamois hunters of the highest vallies of the Bernese Alps, and submitted his opinions to their unprejudiced judgment, in order to obtain from them new facts, to confirm or refute them. His labours were rewarded with the prize proposed by the society.

The author has divided his treatise into three sections. The first commences with an examination of those physical causes which determine the temperature of the atmosphere on the Swiss Alps; he considers the effects of these changes on the nature of the mountains, on the locality and life of the plants, as well as the reaction of vegetable life on the soil, the forms of mountains, and the atmosphere. The second section is dedicated to facts which may throw light on the degradation of the Swiss high Alps. The third section treats of inferences from these facts, and

of the remedies which human power can command to set limits to this degradation.

Our plan does not allow us to give a comp view of the whole of this prize essay. We n confine ourselves to the second, or the geo phical part of it, to which we shall add someth from the third. The author assures us that r of the facts contained in the second section founded on the accounts of the chamois hun whom he consulted; but that he has not admi any statment, the credibility of which he was able to confirm by previous visits to the m tains, and knowledge of the locality thereby tained.

In the absence of ancient written docum and positive verbal traditions, on the alter advancing and receding of the glaciers, at t termination in the deeper vallies, the ridg earth and stones (gandecken) which the gla drive before them as they advance, and l behind when they decrease, are the only mea of their extent. The furrows which the m of the glaciers make in the walls of the r through which they pass, as they advance thr the transverse vallies, indicate the highest p of the ancient glaciers. But no accurate have been preserved either of the time or of extent of the increase and the decrease of

different glaciers, and of the issues of the glaciers of the same field of ice, in past times, in connection with the atmospherical phenomena which preceded them.

More or less certain traditions of the natives of the valley, and the accounts of authors of the latter half of the last century, which were doubtless founded on those traditions, mention the following data of the increase and decrease of the glaciers of the Grindelwald.

In the year 1540, the glaciers of Grindelwald are said to have entirely melted away, as far as they extended between the northern declivities of the Wetterhorn, the Mettenberg, and the Eiger, into the inhabited valley.

In the year 1600, these glaciers and those of Switzerland and the Tyrol in general, are said to have reached the maximum of their advance.

In 1620, according to ancient documents, the upper glacier of the Grindelwald was still near the oldest ridge. To judge by Marian's Map, the mass of glaciers was still considerable in 1660.

From 1660 to 1686, the glaciers seem to have decreased very much.

In the year 1703, they again advanced very considerably. The decrease of 1723 was succeeded by an increase in 1750. From 1770 to

1778, they constantly advanced, and after that slowly receded.

The last advance of 1818 and 1819, has not yet quite reached the oldest ridges.

In the year 1600, and also in 1777, the lower glacier appears to have advanced farther than the upper one, whereas, in general, the advance of the two glaciers was in the contrary proportion.

In the year 1561, the pass of the Grindelwald was still open. Reformed Valaisans still came over to the Grindelwald to be married. In 1578, children were carried from the Valais to the Grindelwald, to be baptized.

The chapel of St. Petronella, which was probably carried forward, or buried, by the advancing glacier, at the beginning of the 17th century, stood close to the edge of the rock along which the lower glacier now advances into the inhabited valley. The date on the chapel bell, which has been found, is 1044. The chapel is still marked on the map of Schopf in 1570.

In the year 1712, three individuals fled, on account of the religious persecutions of that time, from the Valais into the Grindelwald, and spent three days on this dangerous journey. Since that time, no person has passed this way.

In 1777, according to Besson's account, the glacier of the Rhone, in the upper Valais, (which

in 1819 had not reached its remotest and older ridges), was distant above 700 feet from the most ancient ridges, and according to the statement of some shepherds, had been receding for twenty years.

Mr. Kasthofer thinks it worth notice, that this receding of the Rhone glacier coincides with the rapid advancing of the Grindelwald glacier. In 1820, too, the Grindelwald glacier still advanced, when the Rhone glacier had already began to recede in 1819; while, on the other hand, the Trifft glacier, extending to the north, which is connected with it, was still advancing.

The Gleret glacier, which declines from Montvelan to St. Bernard, was rapidly advancing in 1767, when the Grindelwald glacier was receding; and in 1777, had entirely receded, when the Grindelwald glacier was beginning to advance.

Saussure also observes, that (1778) the glacier des Bois, and the glacier of Mont Dolent (on the opposite or Valais Alps) had receded, while the neighbouring glacier of Triolet was advancing. The remotest ridges prove that this glacier was formerly 200 feet higher.

In former times there was a road between the Tschingelhorn and the Buttlassen, in the Lauterbrunnenthal, to the Valais, which was passed for

the last time, in 1783, by some mountaineers of Trechsellani, and is now blocked up with ice.

The spot on which the Renften glacier, in the valley of Urbach, now reposes, two hundred years since afforded a pasturage for forty cows. The date cannot be accurately determined when the glacier forced its way into the valley; the assertion that there was formerly a pasturage there, is a general tradition, handed down from father to son, in the commune of Geisholz, to which the pasture belonged. The part which the glacier spared, was sold, in the year 1569, to the commune of Grund, and was at that time estimated for eight cows only.

The glacier of Renft, which is connected with that of Gauli, has now advanced farther than ever into the valley of Urbach, near the Tossenhorn, and in the summer of 1819, spread itself in detached masses, with fallen blocks of ice, over the beautiful pasturage near the Ilmenstein, which is now in danger of being overwhelmed, as the alpine grazing grounds of Renft formerly were.

The glacier of Renft, several years since, impelled into the valley a piece of a pine tree, on which were still visible, some carved initials, probably the name of the proprietor who felled the tree. The bottom of the Renft glacier, where

these pines must formerly have stood, cannot be more than 6000 feet perpendicular height above the level of the sea, therefore not above the line of vegetation of the red pines.

Near the black board, on the summit of the lower Grindelwald glacier, decayed larches are said to have been still visible in the ice of the glacier, at the time when Gruner described the ice bergs in the vicinity. But here, too, the foundation of the glacier cannot lie higher than the region of the larches, which, according to Von Buch on Beonina, are to be found at a height of 6970 feet. The valley also, which is now overwhelmed with the Gauli glacier, is said to have been formerly an alpine pasture. Ancient traditions report the same of the vallies which the glaciers of the Vorderaar and the Grindelwald have now filled with ice, and which, in their elevation above the level of the sea, cannot be above the actual limit of alpine plants.

In the middle of the Gelmer glacier, on the right bank of the Aar, near Handeck, crystals were formerly dug out of a detached rock, which once towered 150 to 200 feet above the glacier. This rock is now vanished under the accumulating glacier, which has attained its ancient ridges.

The Vorderaar glacier, near the Grinsel hos-

pital, which, in remote times, is said to have covered by its advancing an alpine pasture, has now extended itself several hundred feet beyond the oldest ridge. On the wall of the rocks, between which the masses of the glacier push forward, the highest traces of the furrow made by it are buried under the ice. Several ancient stone pines, which stood here on the sunny side for many centuries, without any traces of decay, began to wither previous to the severe years 1816 and 1817.

Below the Schwartzhorn, the highest point of which is covered with snow throughout the summer, and may therefore be about 8000 feet high, there lies to the northward, in a hollow, the Blue glacier, which is unconnected with every other glacier. George Bauman of Grindelwald, aged 76, says, that he was told by his grandfather, that the commencement of this glacier was some snow from an avalanche, which did not melt away in the summer. The glacier, whose water now augments the Reichenbach and the Giesbach, has increased considerably in the severe years of 1816 and 1817; and the two warm years of 1818 and 1819 could not dissolve the enlarged masses of the glacier, and the accumulation of the snow of 1816 and 1817: the most distant ridge has not, however, been reached.

The Tschingel glacier, at the bottom of the valley Gasteren, to judge by the distance of the oldest ridges, and the furrows on the sides of the rocks which enclose it, must have decreased near 100 feet in height, and 2000 feet in length, in the year 1808. Its most rapid advance was in 1785; at the end of the autumn of 1819, it had not reached the ridge of 1785, from which latter the remotest ridges are still about 400 paces distant.

The Lötschenthal glacier, on the other hand, which is connected with the Tschingel glacier, but which stretches beyond into the Valais, had advanced in 1819 considerably farther than the most ancient ridge.

The Hochwyden Alp, belonging to Gasteren, was formerly estimated to afford pasturage for 100 cows, according to a general tradition, the credibility of which is confirmed by an examination of that part of the Alps; at present, not more than 27 are pastured there in the summer. The degradation is ascribed to the fragments of stone, which, falling from the steep rocks, covered a great part of the ground.

In the little village of Gasteren, 4,300 feet above the surface of the sea, ten families, before the year 1787, used to pass the winter; but none have remained there since that time, for fear of

the avalanches, which have become more and more frequent.

The glacier which extends from Altels towards Gasteren, has advanced farther than ever. The Wildelsig Schafberg had become quite inaccessible in 1819, by its advances.

The Gygli glacier, which formerly scarcely showed itself towards the Grimsel road, is now above 100 feet higher, and (in 1819) advanced several hundred feet farther than it has ever done towards the Aar. Only twenty years since, the Gygli Alp, lying near it, was calculated to afford pasturage for 20 cows, and at present only for 10 cows and sheep. If, according to the old reckoning, 20 cows were driven to it, they would not be able to remain there longer than half the usual grazing season. The degradation of the Alps is ascribed by the inhabitants to the effects of more frequent avalanches, falls of stones, and the obvious deterioration of the grass, and the latter unanimously to the inclemency of the atmosphere.

The Engstlen glacier, on the frontiers of Unterwald, exceeded, in the autumn of 1819, the most ancient ridges. Near this glacier lies the Scharrmatt Alp, on which there are still large trunks of old and sound stone pines, but with no young trees growing between them. From thirty to forty years ago, these pines bore abundance of

fruit, but since that time little or none. Even in the year 1818, which was remarkable, in the Tyrolese high Alps, for a rich harvest of fruit of the stone pine, there was very little on the Scharrmatt Alp.

On the Grindelwald Alps, the fruit of the stone pine ripened in great abundance about thirty or forty years ago, but since then, in very small quantities: sometimes the fruit, and sometimes the blossom, has been spoiled by severe and early frosts in autumn, and late frosts in the spring. This failure of the stone pine harvest cannot be ascribed to the decay of the old stone pines, as there are still a great many sound old, and also younger trees, on the Itrammen and Wargisthal Alp. The shepherds and natives of the vallies attribute it unanimously to the increasing inclemency of the weather.

Near the Gadmenfluh, on a declivity inclining northwards to the Engstlen Alp, where the snow used formerly to lie, the latter assumed, in 1819, the nature of a glacier, began to split into clefts, and to advance.

The Wenden glacier, sideways of the Gadmenthal, has not reached its oldest ridges, but that of 1770; the glaciers of Rufestein, Schmadri, and the Jungfran, towards the Wengeren Alps, had exceeded the most ancient ridges in 1819.

The Stein glacier, next the Alp, over which the new road through the Gadmenthal leads to Mount St. Gothard, reached, in the autumn of 1819, the oldest ridge, but did not attain its former elevation. Near this glacier, on the shady side of the slope, there was rich pasturage for 20 cows, about 60 years ago, on the Kuhbergli and Umphol pasture; it is now scarcely fit as a grazing ground for sheep. This deterioration of the meadow is not caused by falls of stones, the advances of the glacier, or avalanches, but, according to the shepherds, by the greater inclemency of the atmosphere.

The Gelten glacier, at the bottom of the Lauwinen valley, had advanced, in 1818, a thousand feet beyond the oldest ridges. The Gadmenthal, which runs from east to west, and is about 4000 feet above the level of the sea, grows narrower at the place called Schafftelen, towards the adjoining, rather more northerly, Nesselthal. From the south runs the mouth of the narrow and high Trifft valley, at the bottom of which the Trifft glacier is connected with the Rhone glacier. In the contracted part of the valley, there were formerly thick forests of pines; the Sohleck and Oergetli forest, along the steep mountain slopes to the bottom of the valley. Thirty or forty years ago, these forests were quite cut down by the directors

of the mines. Since that time this side of the mountain has continued bare, partly for the want of being sown, and partly from the browsing of the goats; and, according to the general account of the inhabitants, the Gadmenthal has become colder. They complain that avalanches were formerly not so frequent; the north-west and south-west winds not so violent; that many garden plants do not thrive so well as they used to do; and that cabbage, for instance, does not come to a head. In the year 1788, according to the testimony of several aged and credible persons, there grew in the fields of the village cherry-trees, 30 feet high, and from 8 to 10 inches thick, on which the cherries sometimes ripened; they have borne no ripe fruit for these 35 years. The old trees, stumps of which were shown to the author, have perished, and the young ones, which have been planted since, decayed when they had scarcely attained eight feet in height.

The small village of Andereck, in Gadmenthal, suffered but little from avalanches in former times; and 12 years ago, no instance was known of houses situated there having been overwhelmed by them. High above the village, on the southern side of the mountain, is the small but deep lake of Gadelaui, under the declivity of a rock, from which, from time to time, avalanches

fall towards the lake. Formerly, the water of the lake always froze in the winter, but never so firmly, but that the ice broke on the falling of an avalanche. The force of the avalanche was broken by the water of the lake; and only water, with melted snow, was driven over the declivity towards the village, without occasioning any damage. But in these latter years, the lake has frozen so hard, that the avalanche rolled over it, without breaking the surface, crushed the forest on the declivity, and three houses of the village, with their inhabitants.

The village of Guttannen, situated 3,300 feet above the level of the sea, lies in the south of the valley towards the Grimsel; farther down is the little village of Imboden, in a narrower part of the same valley. Since the forests of Guttannen have been cut down, either entirely or in a great measure, to rebuild the village after repeated fires, the Föhn (or hot wind, resembling the Sirocco in Italy) blows more frequently and violently down the valley. Before the destruction by fire of the village of Guttannen, its fields, and also those of Imboden, were often planted with hemp; which has been since discontinued because the snow sets in so early.

In Guttannen, as well as in Imboden, a great deal of the strong spirit called cherry-water, was

manufactured; but this has been long discontinued, because the cherry-trees have ceased to bear fruit.

Above the Henstein Alp, opposite the village of Imboden, lies a pasture which formerly belonged to one Melchior Zwalder, who died about forty years since. Old inhabitants of the village still perfectly remember that this Melchior used to collect twenty bundles of hay on this meadow; whereas at present, even in the most favourable years, no more than ten bundles are gathered on the same spot, which is not exposed to avalanches, glaciers, and falls of stones.

On the great Engstligen Alp, in Oberhasli, the day for driving the cows to the pasture was usually the longest day (the 21st of June); but for these thirty or forty years past, it generally takes place eight or ten days later. The time of leaving the Alps was formerly Old Michaelmas day (the 12th of October), old style; but since the abovementioned period it commonly takes place on New Michaelmas day. In general, the day of the Hasli fair was formerly the time when the cattle were driven from most of the pastures of Upper Hasli; this is now usually done a week earlier, not so much because the fall of rocks gradually covers more of the meadow, as because the pasture on the mountain ridges, particularly

on the shady side, degenerates, and, instead of juicy herbs, the exhausted soil is covered with lichens and mat-grass (nardus strictus).

On the Gimelwald (4090 feet above the level of the sea), the old Hans Feuz, thirty years ago, used to gather ripe fruit off three beautiful cherry trees. The purchaser of the meadow on which they stood had them cut down some years since, because the fruit did not ripen. Young cherry trees are no longer planted on the Gimelwald, because experience has shown that they will not thrive.

On the Boganggen pasture, belonging to the Sefinen Alp, behind the summit, many horses were formerly led to graze, according to the account of an old man, of Murven, aged 74, who died about 25 years since. The grass is now so degenerated that no horses are pastured there, and only a few cows, for a short time during the day, find there but a scanty subsistence. Here, too, neither falls of stone, avalanches, or glaciers, are the cause of this degradation. On the highest parts of the same alpine meadow there is now no green turf, where nourishing plants formerly grew. This deterioration proceeds from the snow having continued to lie upon it in the years 1816 and 1817. Most of the snow, it is true, melted in 1818; but in the autumn of 1819

the green sward had not yet recovered, and the good soil was visibly diminished.

On the lower Lawinen Alp, in Gentelthal, on which grew a number of large and ancient maple trees, Melchior Dennler, of Wyler, observing several young stems of this species, which had shot up from the seed, carefully fenced them round about ten years ago, to preserve them from the cattle: they lived nearly six years, in which time they did not grow above three inches, and then all perished. The inhabitants of Gadmenthal, where ancient maple trees, six feet in diameter, are standing, complain that the few young shoots of this species will not prosper.

Mr. Kasthofer quotes forty similar instances of the perishing of the forest and fruit trees, the deterioration of the pasturages, the overwhelming of fertile vallies by the glaciers, &c. partly during the series of 30, 40, 50 and more years, or partly since the cold summers of 1816 and 1817. It is unnecessary to detail them, and we rather extract from the third section of his book some of the inferences which the author is induced to draw from these facts.

The appearance of our vallies, says he, leads us to conclude that the mountain streams formerly flowed from a greater height; that the

waters, descending from their source, spread into basons or lakes, lying successively lower; that these basons were, in the sequel, gradually filled up by the earth carried down from the higher mountains; and when, by earthquakes or the friction of the masses of rock which had been for centuries carried down by the water, their divisions were rent, the hollow vallies of the high mountains assumed their present form. In a similar manner we may, perhaps, explain the spreading of the ice from the highest vallies of the mountains into those below.

The highest summits of the Alps discharge the masses of snow, which the long winter accumulates on their tops, by avalanches, into the basons lying at their foot; the higher ice vallies into the deeper, and these, over flowery meadows, into the inhabited vallies. The icy mass, which continually sinks down, when the waters undermine its rocky base, is not inert, but is always raised in winter by new burthens, again to fall in.

Thus, during a period beyond the reach of authentic documents or of tradition, the masses of frozen waters burst with immense force their rocky banks, which, in the course of one or more thousand years, must give way to the irresistible pressure.

It is evident, from the nature of the motion of

the glaciers, and the effects of the avalanches, that the force of the latter, and the shock of the masses of glaciers, incessantly tend to burst the rocky walls of the single icy basons, and to connect together the vallies of ice which lie above each other. The rocky base of the ice fields cannot remain the same for a long period, as the slopes, on which the glaciers press downward, must become flatter where the mighty impulse of the moving mass incessantly inclines to level every inequality. For this reason, even if, in the course of centuries, the quantity of accumulated ice should remain the same, the spreading of the ice fields from the upper reservoirs to the lower must naturally be different.

It is not merely the quantity of the snow fallen, the number and mass of the avalanches of preceding, and the more elevated temperature of succeeding, years, that favour the melting of the snow, and the undermining of the lowest strata of the glaciers which determines their advance: predominant currents of air, sometimes continuing in one direction, sometimes varying, which often, independent of the temperature, heap up the snow, now on one side, now on the other, and promote avalanches; clefts which arise under the ice fields, sudden bursting of the rocky walls *of the separate basons*,—these circumstances con-

tribute, perhaps, still more than the former, to the movement and spreading of the glaciers, which can in no case afford an accurate standard of the increasing or decreasing temperature of high mountains.

If we have here assumed that the efforts of the avalanches and the impulse of the glacier must, in a long process of time, have the effect of bringing larger masses of ice from the upper vallies to the lower; if it is highly probable that, in future ages, the number of vallies and alpine meadows filled with ice will increase, this effect of the avalanches, the slow and continued influence of the weight of ice, will become, in still more remote times, the cause of the more general retreat of the glaciers from the deep vallies, when the colossuses which now rise several thousand feet above the glaciers are destroyed, and can no more fill the upper vallies with avalanches. Mr. Ramond, a French naturalist, who made observations on the Pyrenees, conjectures that one century is sufficient to cause the naked summits of the highest rocks to sink one foot.

In almost all the vallies of the Alps there are ancient traditions of spots which were formerly fertile pastures, and are now covered with glaciers. These are called by the inhabitants Blümlis Alps. The similarity of the denomination

given to such different vallies, at a distance from each other, and to several mountains which are far above the present limit of vegetation, proves the antiquity of the tradition, as the general popular belief does the reality of the fact that the glaciers extend; though this general belief may, perhaps, have often produced the individual traditions, which may have had their origin more in uncertain belief than in faithful verbal records. It is natural to man, who so easily forgets past evils, who feels present difficulties, and to whom the future promises no brighter hopes, when he looks back upon history or upon his own life, deceived by his wishes, to see flowery plains wherever the ice covers the dead rock. But if ever the Blümlis Alps of the Razliberg, of the Kienthal, and many others of which tradition speaks, were ever green pastures, the period of their transformation must be far beyond the period of the remotest traditions.

Much stronger proof than the old traditions, of Alps which are now covered with glaciers, but which probably were always above the limit of vegetation, or under the line of the avalanches, is afforded by the communications which were formerly open between the ice vallies, and are now blocked up with ice. If the alternate advance and retreat of the glaciers depended only

upon the mass of snow of some winters and the heat of the following years, the communications obstructed by the former would be opened by the latter, in the same manner as the glaciers have always fallen back from the outermost ridges. But those paths have been closed for two centuries, not by the accumulation of their masses of ice in general, but by the breaking up and splitting of the highest fields of ice; the more and deeper their sides are furrowed out, the more the lower icy vallies are filled up, and the more violent the shock of the glacier must be against the rooky wall along which the paths of communication formerly led.

The map of the glaciers, in the middle of successive centuries, if the comparison were possible, might afford a standard of the increasing or decreasing temperature on the high Alps, but, as we have already observed, the spreading of this mass of glaciers never could. That the passes towards the Valais and Italy have been open for hundreds or thousands of years, does not necessarily prove that the temperature has been the same during all this period; as, on the other hand, the spreading of the glaciers of the adjacent vallies of ice into the alpine passes and closing them, is no argument for the decrease of the temperature. The greatest roads of communication

between Italy and Switzerland, run through deep intersections of the longitudinal vallies, the rocky sides of which are too steep to support many and great avalanches, and to favour the formation of large glaciers.

It results, from the facts above stated, respecting the spreading of the glaciers into the lower vallies, that notwithstanding the extraordinary fall of snow in the winters of 1816 and 1817, and the very hot years 1818 and 1819, several glaciers, however, did not reach their most ancient and remote ridges. Now, when it is here assumed that the extending of the glaciers is chiefly to be ascribed to the breaking up of the partition walls between the higher and lower ice vallies, and to the levelling of the rocky basis, this explanation seems to contradict the above fact, because, since the time when the glaciers retired from their outermost ridges, the destruction of these partitions certainly proceeded; consequently the increase of the masses of ice must likewise have been going on, and the glaciers have passed over the remotest ridges, in those years when so much snow fell.

But in preceding centuries, the quantity of snow was doubtless greater than in later times, because, in wooded countries, the mass of snow and rain is always greater than under similar cir-

cumstances in countries which are bare of forest. But it is sufficiently evident, from the facts above stated, how the ancient forests have diminished on our high Alps. The atmosphere, which has become drier in consequence of the want of wood, checks the extending of the glaciers, though in a less degree than the destruction of the rocky sides favours it.

A superficial inspection of our mountain chains shows that the majority consist of ancient debris, which are almost every where clothed with green turf, where they are not covered with forest. Even now, such debris, which are formed within our own knowledge, are frequently covered with green sward, especially in the woody regions, or where projecting rocks afford a defence against the winds; and the grass, secure from the cattle, more readily brings its seed to maturity, which is easily dispersed by gusts of wind over the bare spots. But on the ridges of mountains, or on places, which, lying above the woody region, are unsheltered from the storm, it is more difficult to disperse the seeds; and the turf, under such circumstances, is not renewed at all, or only after a long period.

The disappearance of the grass, and the growth of lichens in its stead, which is almost every where observed on the highest alpine meadows,

must be particularly striking on those kept for sheep, which are higher than the cow pasturages, and extend above the limits of the woody region, and often higher than the fields of ice. But though the shepherds universally complain that the grass degenerates, yet this decrease on the sheep Alps is not in proportion to that observed on the loftiest cow Alps. The high prices of cheese and hay have, in general, counteracted the breeding of sheep in the alpine vallies, near the author's residence; and as the division of the land in the vallies proceeds, the breeding of sheep must decline. For some time, therefore, a much smaller number of sheep than formerly is driven to the Alps. This circumstance has a favourable influence on the preservation of vegetation, and counterbalances, in part, the injury which the pasturing of sheep does to the grass on those sterile eminences.

If, after the facts we have quoted, the degradation of the high Alps, and particularly the diminution of their vegetation, cannot be called in question, it may be asked, whether this diminution is progressive, or whether it is caused by cosmical influences, acting for a series of years, and then ceasing.

It is very evident that the decay of the higher rocks of the Alps, as of every other high moun-

tain, is progressive, and in consequence of causes which are before our eyes, and that the influence of this decay on the vegetation cannot be transitory. But will the vegetation on those heights be renewed, which so visibly disappears from the Alps, even where there are neither glaciers, avalanches, nor falls of earth? If years like 1818 and 1819 should be frequent in this century, and if, on the other hand, years like 1816 and 1817 should not return, will not such favourable circumstances be able to revive the decreased vitality of vegetation?

A celebrated writer (Von Buch), to whom we are indebted for a more accurate knowledge of nature in the north of Europe, speaks of changes of climate in Norway, similar to those described above. Near Drontheim, in Helgeland, in Senjen, the time of sowing, in the remembrance of old people, differed eight, and even fourteen days from the present time. Near Drontheim, fruit was formerly gathered, but now (in 1809) this has long ceased to be the case. In Hardanger, they show, on some mountains, the commencement of small glaciers, of which there were no traces several years ago, and now they visibly increase. The tops of the mountains on the Tielesond were formerly free from snow every year, but for many years past it never melts.

But similar phenomena took place centuries ago, without any permanent diminution of the temperature. Under the government of Harald Graafeld (in 960), the whole kingdom of Norway was covered with snow till late in the summer, and in all Helgeland there was no harvest. The poet Eviud Skaldaspiller loudly complained of the change of nature, since, in the middle of summer, he could not go out of his house without treading on deep snow. Good years, however, returned, and the harvest ripened as usual.

In our alpine vallies too, milder seasons will follow inclement years, which have now perhaps passed over. Glaciers will often recede, and the green sward will again clothe the rough mountain ridges, where it was destroyed by the unusual masses of snow; trees will again grow more luxuriantly on lower ridges, and in sheltered vallies, where they have long since ceased to thrive. But where, after the destruction of the forest, the cold winds, or the violent Föhn prevails; where the fertile soil has been carried away by torrents or by hurricanes; where no foliage and no vegetable substance, by its corruption, renews the mould; where no seeds ripen, or where they are dispelled by the winds; where no tree will thrive to protect the young vegetation,

and the avalanches are more frequent—thousands of years may pass before the ancient spring returns to the decaying mountains.

But it is now time to extract and to arrange the conclusions, which may be drawn from the above mentioned facts and observations.

1. There is but little coincidence in the advancing and receding of the several glacier issues in the deeper vallies.

2. The glaciers do not increase only in consequence of very snowy winters, succeeded by hot summers, but also in consequence of the gradual destruction of their basons; and this destruction, occurring partially, together with the irregular accumulation of snow by avalanches, are the causes of the irregular movements of the glaciers.

3. There is no proof that the masses of the glaciers, on the high Alps, have increased in the lapse of many centuries; but it is a fact, that these masses have spread lower and wider, which, however, is no proof of the decrease of the temperature.

4. It cannot be proved that the line of snow, in general, on the high Alps, comes lower down than some centuries ago. This line may rise in one or several years, upon individual mountain slopes or ridges; it cannot be generally determined; it rises or falls from local causes.

5. Avalanches never occur on mountains overgrown with forest; they have become more frequent and destructive in the wooded tracts, in proportion to the greater devastation of the alpine forests; but they do not prove a diminution of the temperature. There is no probability that the avalanches have become more frequent, above the region of our pines, or that their masses are more considerable.

6. The deterioration of the grass on the Alps is a fact; the green sward vanishes, and after that the fertile soil, even in those places where neither glaciers, avalanches, nor falls of rock can have caused it. It has occurred chiefly on those Alps which are far above the woody region.

7. The green sward disappears, particularly where, after heavy falls of snow in winter, it does not melt in the following summer; but it vanishes also where cold currents of air, or the south-wind, blow with more frequency and violence.

8. The forests in former times extended, in general, much higher up the Alps than they now do; and even in the loftiest part of the present limit of the forests, the decrease of the power of vegetation is visible. The trees do not grow to such a size as formerly; but we have no proof that the highest limit of the forests was ever higher

than their possible limit now is, where local circumstances favour the growth of trees.

9. The currents of air are more violent where the forests have been thinned, or wholly vanished, and these currents and gusts destroy the vegetative power of the mould, which is bare of grass.

10. It cannot be proved that the temperature of the high Alps is lower than formerly, not even where the power of vegetation is visibly diminished. It is rather to be assumed, that the frequent and more violent winds, on the high Alps, have a detrimental influence on the plants by cold, but still more by drying up the mould, and carrying away the elements that nourish the plants, the accumulation of which, in the lowest strata of the atmosphere on the mountains, is less in proportion as they are more bare of wood.

With respect to the means of counteracting the farther degradation of the Alps, and the local decrease of temperature, we cannot follow the author in the details. They are confined to the preservation and restoration of the green turf on the highest alpine pastures, and on that of the forests.

MANNERS AND CUSTOMS

OF

THE RUSSIANS

IN THE GOVERNMENT OF KASAN.

Mr. John Frederick Erdmann, Medical Professor in the University of Dorpat, has lately published an account of the government and city of Kasan. The author having resided seven years in Kasan, and made several excursions into the interior of the country, it was to be expected that his narrative would be very interesting and complete. Omitting the medical and statistical details, we extract the following particulars relative to the manners and customs of the Russians.

The mode of life is, of course, very different, according to the several classes. The peasants, the mechanics, and the common soldiers, live almost entirely on groats, with a little fat (sometimes milk), bread and quas, with perhaps cucumbers in summer, and sourkrout in winter—but very seldom meat. They drink brandy, and often to excess. The citizens and the merchants live

on a more or less brilliant footing; eat a great deal of meat, with various kinds of vegetables. They drink brandy, with bitter aromatic herbs, and, when they can afford it, rum. In general, their table is but little inferior to that of the nobleman, only that they keep more to national dishes. The rich nobility live in a style of luxury; they keep professed cooks, who have learned their business at Moscow or St. Petersburg, and understand both the French and English cookery. The following is the usual mode of living in the cities, among the higher classes. They rise at eight or nine (persons in business are of course earlier, and women often later), are dressed* and drink tea, and afterwards perhaps coffee. The men then go to their business, if they have any; read the newspaper, but seldom a book; ride out, like the ladies, to pay visits, or stay at home to receive them. In general some refreshment is taken, such as dried or fresh fruits, preserves or confectionary. They then take a luncheon, *i. e.* without sitting down, drink a glass of brandy, with herbs or spices, and eat with it a piece of meat, fish, liver, bread and butter, radishes, or eggs. These

* It is nothing extraordinary that the rich man makes his servants assist him; but it does seem strange that persons, in a lower class of life, cannot wash, without having a servant to pour the water on their hands.

luncheons often consist of a pretty considerable number of dishes, and, in that case, a fish pie, in the form of a long loaf, is indispensable. This remains on the table till dinner time, and every body that comes in is invited to partake of it, which is seldom declined. Dinner is generally served at one or two o'clock, when a small glass of brandy is taken before sitting down to table. The dishes, whether more or less numerous, are generally dressed in the French fashion, though the national cookery is not entirely excluded. Among these dishes, in particular, is a cold soup (podwinja) which is made of quas, with herbs and raw cucumbers, cut small, to which is added a piece of cold fish; also cabbage soup (schtschi), made of cabbage cut very small, boiled with meat; curdled cream is sometimes added. They have, besides, groats and butter, and a jelly of the finest flour, mixed with acid syrup of fruit. Quas, beer and wine, of different sorts, and Nalivka*, are the usual beverage at dinner.

* Nalivka is prepared from brandy, which is suffered to stand upon fruits, for instance, cherries, sweetened with sugar. Schipovka is a similar beverage, though not so common, which is made of a decoction of different berries, mixed with sugar, which is bottled off during the fermentation. It sparkles, when good, like champagne.

After dinner they drink coffee, and then, in many houses, grog; then they lie down to sleep, or walk in the garden, and afterwards ride out to pay visits; when they are presented with berries and fruit preserved in sugar, raisins, almonds, nuts; then tea*, which is handed round with cream and rum to be added at pleasure, and grog for the gentlemen. The remaining time is spent in conversation or cards; and about nine or ten o'clock, after taking a dram, they go to supper, which is rather more frugal than the dinner, and generally consists of what was left, warmed up afresh.

This fashion looks, indeed, like the way of living at an inn; but, in fact, a day seldom passes, in the interior of Russia, without having company at home, or visiting abroad; for society is like a necessary of life to the nobility, and hospitality is universal among them. A stranger, therefore, who is a single man, need give himself no trouble

* Tea is a favourite beverage all over Russia. It is taken with sugar, cream, or rum. In the higher ranks it is regularly drank every morning and evening; among merchants much oftener, perhaps seven times in a day —even between the dram before dinner and the first course. The tradesman generally has an urn boiling, in his shop, that he may make tea whenever it is convenient.

about eating and drinking; at least, hardly a day passes without visiting. The only exceptions are the more rigorous fasts, and the residence in the country, where, however, neighbours frequently visit each other. Besides, they endeavour to make up for the want of many amusements which they have in the towns, by collecting the country girls to sing, in the evening of Sundays and holidays, or having dances performed by the peasantry. Many land-owners also cause some of their servants, who are the best qualified, to be instructed in instrumental music.

When larger companies are invited in town, which are very common, great magnificence is displayed. The company remain assembled till late at night, or return home after they have reposed after dinner. Music and dancing are very common in the evening; but the principal diversion is cards, both before and after dinner, and in which the ladies, as well as the gentlemen, take part. Smoking is not prevalent, but snuff-taking pretty general.

It is no wonder that such a mode of life should call forth, in the higher classes, a distinguished talent for social intercourse, and that any deficiency in the intrinsic value of their conversation is made up for by external polish and pleasing manners. Hence we meet in company elegant

manners and freedom from constraint; persons of very different rank freely conversing with each other. The ladies, it is true, generally associate together, and at table have the first places; the gentlemen, however, are not excluded from conversation with them, and are mixed with them at the card table. On addressing them, they generally kiss their hands, which they return with a kiss on the cheek. When any person chooses to retire, he withdraws unobserved, without the troublesome custom of taking leave.

Among the chief necessaries of life of the Russians, are the baths. The arrangements of them are the same as in the other provinces of the empire. The bathing house usually lies at some distance from the dwelling house, in the court-yard or garden. There are generally one or two dressing rooms, and the bath.

This way of living is considerably changed during the fasts, which occupy no inconsiderable portion of the year. The principal are; 1. The great fasts before Easter. These begin on Sexagesima Sunday and last till Easter, which is eight weeks. In the first week, which they call *Butter week*, they abstain from meat, but continue to eat every other article of food. In the following week the strict fasting begins, which *is the most rig*idly observed, in this week and in

the last week before Easter. 2. The fast of St. Peter. It begins on Trinity Sunday, and ends on St. Peter's and St. Paul's day (the 29th of June), and is therefore not always of the same duration. 3. The fast of the Mother of God, which always begins on the 1st of August, and ends on the 15th. 4. The fasts of Christmas, which last from the 15th of November to the 24th of December. Besides these, every Wednesday and Friday is a fast-day.

According to the laws of the Greek church, meat, eggs, milk and butter, and all animal fat, are prohibited during the fasts. Those who are accustomed to a greater variety of food, endeavour to supply the want by lawful substitutes. Among these, in particular, are, fish, caviare, mushrooms, preserved berries, fruits, potatoes, vegetables, pastry, milk of almonds, olives, and poppy oil. Poor people content themselves with hemp oil; and besides this, their diet is restricted to rye bread, groats, and cabbage, to which, in summer, are added cucumbers, and various kinds of berries. Sickness, however, dispenses with the strict observance of the law. On the whole, the middle and lower classes are more scrupulous than the higher in observing the fasts, and many even abstain from fish. Monks and *nuns never eat meat* at any time.

The mode of life is affected in a different manner by the holidays, which are much more numerous in the Greek than in the Protestant church. Trade, work and business, are suspended, people attend divine service, and then (except during the fasts) generally give themselves up to amusements. Those holidays which are universally observed, and on which the courts of justice and public schools are closed, are the following:—New year's day; the Epiphany, (the 6th of January); the Purification of the Virgin, (the 2nd of February); the Friday and Saturday in the Butter week; the Annunciation, (the 25th of March); Thursday, Friday, and Saturday, in the Passion week; the whole of Easter week; St. Nicholas, (the 9th of May); the Ascension of our Saviour; the Sunday and Monday in Whitsun week; St. Peter and St. Paul's day, (the 29th of June); the Transfiguration, (the 6th of August); the Assumption of the Virgin, (the 15th of August); the Beheading of St. John, (the 29th of August); the Nativity of the Virgin, (the 8th of September); the Elevation of the Cross, (the 14th of September); John Theologus, (the 26th of September); the Intercession of the Virgin, (the 1st of October); the Festival of the miraculous Image of the Mother of God of Kasan, (the 22nd of October); the Oblation of the Virgin,

(the 21st of November); St. Nicholas, (the 6th of December); and the Christmas holidays, namely, the 25th, 26th, and 27th of December. To these are added the Accession and Coronation of the Emperor, and birth and saint's days of the imperial family. Several holidays are followed by particular popular festivals. Thus, from Christmas to Twelfth day, the populace run about in the streets masked, divert themselves with dancing, singing, &c. In the higher classes there are masquerades about the same time. This custom is supposed to have originated in the ages previous to Christianity, and to be of Sclavonian origin. It concludes with the consecration of the water at the feast of Epiphany, when, after the performance of divine service, the clergy, followed by the people, go in procession to the neighbouring waters, and, after reading certain prayers, consecrate the rivers and lakes, by plunging the crucifix into them. For this occasion, square holes, which are called Jordan, are usually cut through the ice, and adorned with green branches of fir tree. After the conclusion of the ceremony, the persons present are sprinkled with the consecrated water; and people of the lower classes frequently leap, naked, into this water, by way of penance, for the excesses they have committed in

their masquerading. The Carnival, which lasts eight days, begins eight weeks before Easter, on Sexagesima Sunday. This week of mirth is called, in Russia, Masleniza, or Butter week, because the permission to eat butter ends with this week, which is the last before the great fast. This week is devoted to pleasure, particularly the three last days, including Quinquagesima Sunday. From an early hour in the morning, visits are paid, to take leave of friends before the approaching fast. At these visits, pancakes, fried in butter, are eaten, and drams taken with them. These pancakes are made very delicate in the great houses, and generally served with other dishes. The poor people make them of oatmeal, and drink ordinary brandy with them. It is very rare for any person, of the lower and middle class to get over this week, without being once drunk; and, even among the superior classes, a debauch is most readily overlooked at this time. Nay, the vulgar would consider it a reproach to have remained sober, and he who thinks to travel at this time, must make up his mind to run the risk of having his neck broken by drunken drivers. They drive furiously through the streets, and, amidst shouts and cries, the sledges fly and cross each other in all directions. Driving abroad is, at this time, such an indispen-

sable pleasure for the whole nation, that even the poorest, and the child of a servant, cannot easily forget it, if he has been obliged to do without a ride during this week. The common people, who, at all other times, go on foot, and the coachman, whose usual business is to drive others, now hire little sledges, for a few copecs, generally from the Tartars, who have remained sober, to be driven up and down a few streets: masters often suffer their people to make use of their own sledges. If the streets in Russia were not so broad, and the sledges so low, innumerable accidents would be caused, in this season, by rapid driving and overturning. Among the higher ranks there are, at this season, evening parties, music, masquerades and balls; and in the last Sunday in Butter week, after a magnificent breakfast, they drive in procession, in sledges, through the streets, and the day is concluded with mirth and feasting.

How very different does the following morning appear! The streets are quite deserted, and the silence is interrupted only before and after divine service, when the inhabitants walk slowly and devoutly to and from church. All is still, and only the bells sound, at long intervals, from the steeples, like the dirge of worldly rejoicing. In the houses the inhabitants sit alone, in fasting

and private devotion, and prayer; many even prepare themselves this week for taking the sacrament. This striking contrast lasts eight days, when it becomes less austere; a great many begin again already to eat meat, and to think of visiting, though public amusements are not allowed. In this sober and quiet way of living, Passion week approaches, when every body is inspired with increased devotion. In this week most people take the sacrament; for there are very few members of the Greek church who do not receive it at this season, unless they have already done it at the beginning of the great fast.

The solemnity of this week is enhanced, when the archbishop performs, on Holy Thursday, the ceremony of washing the feet in the cathedral. After mass a large silver basin, and a silver ewer, filled with water, are placed upon a table, covered with a carpet, standing at one end of the church, around which twelve seats are placed. After a pause, the archbishop approaches the table, with his face turned towards the altar, and round him twelve priests with bare feet. At the same time the choir begins a solemn hymn, and two deacons divest him of his pontifical robes, bind on a linen apron, and hang over his left shoulder a long cloth, which is fastened round his body. The

priests now sit down on the seats behind them, and the archbishop, covering his head with his mitre, takes the empty basin in his hand, and, accompanied by one of the deacons, who carries the ewer, advances to the first priest; and, kneeling down, pours the water from the ewer, which is given him, on his right foot (holding the basin beneath), and, returning the ewer, dries it with the cloth hanging from his shoulders. This is repeated to every one, while a deacon, standing at some distance, recites, several times, in a slow tone, the words of the Gospel which describe this act of our Saviour. The last of the priests (always an archimandrite) refuses, in the words of St. Peter, to permit this act to be performed upon him, on which the archbishop replies, in the words of Christ, and does this work of kindness to him also. After the washing is finished, he returns to the table, and pronounces the words spoken by our Saviour after the act. The song of the choir is repeated, during which the bishop is again invested with his robes, in which, accompanied by the clergy, he retires to the altar behind the iconostas.* In conclusion,

* This is a partition, or screen, covered with images of the saints, and divides the altar from the church. It has three doors; the middle is called the royal, and is

he again comes forward, gives the benediction to the people, by inclining the crucifix three times, and the ceremony is over. This solemnity is not observed every year; in Moscow itself, only every other year, while, in the intervening year, and on the same day, the holy oil, for all the churches in Great Russia, is consecrated by the archbishop.

On the other hand, the taking down from the cross is represented every year, in all the churches, on Good Friday, and at five o'clock on the following morning they perform the representation of the interment of Christ. The image of our Saviour, painted on linen, is laid on a table covered with black, before the altar, on the first day after mass; and on the next day carried by two priests on their heads, round the church, within-side, and sometimes on the outside, preceded by others carrying a censer and large lighted tapers. After going round, the image is again laid on the black table, and four burning tapers placed near it. Besides these, every one of the attendants carries a small lighted taper in his hand. Two hours after, mass is performed, and the sacrament administered, of which, as we said before, most of the inhabitants partake on this day. According

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alternately opened and shut during divine service, so that the altar is sometimes seen and sometimes not.

to the Greek rites, a priest, standing before the principal door of the screen, holds the consecrated cup, in which the bread and wine are mixed, and presents a piece, in a silver spoon, to the communicants, who advance one by one. This is the way that the sacrament is received in the Greek church, even by children in arms. The remainder of the day is spent in silence and meditation.

When night sets in they gradually prepare for the celebration of Easter. All the churches and steeples are illuminated to their very summits; and towards midnight, till which time the image of the body of Christ remains unmoved, they are crowded with people, each of whom carries a burning taper in his hand. Precisely at twelve, the celebration of the resurrection commences: after some psalms are sung, the bishop, or the first priest of the community, holding the crucifix in his right hand, and a burning taper and a censer in his left, advances before the door of the altar. Accompanied by the other priests, in their pontifical robes, he walks round the church, exclaiming several times: Christos woskrés, (Christ is risen!) on which the choir instantly join in hymns of joy, and a cheerful peal resounds from all the steeples, which is answered by the thundering of the cannons from the fortress. After

going round, the bishop, with all the clergy, remains standing before the altar, and reads prayers aloud with them, alternately with the chanting of the choir. Then the pope, accompanied by a deacon, (as the bishop, or archimandrite, does in the principal church), bearing in his right hand a crucifix, and in his left a censer, and also a taper, proceeds round the church in the same manner, and lastly each deacon, but without any attendant; upon which other hymns are sung; and when they are concluded, all the clergy present place themselves in a row before the altar, each bearing a crucifix. All the congregation now advance, and kiss one crucifix after the other, and directly after the cheek of the priest who holds it, and then each other, exclaiming, Christos woskrés; and the answer is, Woistenu woskrés! (Indeed he is risen!) For at least a week after this time, and in letters till Whitsuntide, these words remain the general salutation of all those who meet or write to each other, the first time after the resurrection. They are accompanied with one or more kisses, without distinction of sexes; and even the prince does not refuse it to his servant or peasant, and in general they make presents of painted eggs. Persons of higher rank present each other with artificial and expensive eggs, (made of porcelain, ornamented

with paintings, or filled with sweetmeats), and also with other things; and universal joy prevails. If people drove about in the Butter week to take leave of each other, they now do the same to wish each other joy. All fasting is now at an end, and they again begin to eat animal food, which, in the beginning, is generally dressed with curdled milk and eggs. Commonly they have the first food they take, namely, a loaf and curdled milk, consecrated in the church the first day after Easter. In this week nobody thinks of work, the courts of justice and schools are shut, and people go into company, and run after pleasure. In the next week, business and work gradually return into their former channel, and all things go on in their regular course.

A few weeks after, on the Wednesday after the Jubilate, there is another consecration of water, as on the 6th of January, accompanied with the same ceremonies; and the Thursday before Whitsuntide, a festival is kept by the villagers, which they call Semik, probably from sem (seven), this being the seventh Thursday after Maundy Thursday. It has no religious meaning, but is said to have originated in the times before Christianity. No work is done on this day, and the women and girls in the country celebrate it with much festivity. They dress

themselves in the most elegant manner, walk about in the open air, sing, dance, and adorn their hair with chaplets of birch and other twigs. These they throw into the water, in the evening after the conclusion of the ceremony.

Whitsuntide is, indeed, of much less importance among the Russians, than Easter; but it is a popular festival in the government of Kasan, where, for a week together, every body hastens to enjoy the amusement of swinging. This, as is well known, is a favourite diversion among the Russians, and they enjoy it in particular during Easter week. At Kasan, on the contrary, it is only at Whitsuntide, probably because the weather is too inclement at Easter. People are then seen in great numbers flocking to the plain, near the city of Kasan, where swings of various kinds are set up, and provisions are carried about for sale, to indulge in that amusement: coaches, filled with spectators, of the higher classes, drive round the outskirts of the plain.

Midsummer is very interesting, because every body throngs to the convent of Pustina Sedmoernaja, or Sem Oserow (of the seven lakes), which is situated about 17 versts from Kasan. Here is placed the miraculous image of the Mother of God of Smolensko, and to which the city of Kasan was once indebted for its deliver-

ance from the plague. On this day they bring presents to the convent, pray before the image, and pass the remainder of the day in rejoicing. The solitary convent is then surrounded by a motley assemblage of people, moving to and fro in all directions, sometimes pouring in and out of the gate of the convent, and sometimes refreshing themselves at the neighbouring booths, set up for the occasion. They pass the night partly in the adjoining houses, and partly in the open air, waiting for the break of day, to commence their holy journey. As soon as it begins to dawn, they again repair to the church, where they perform their devotions; after which the holy image is taken from its station, and, amidst the prayers of the people, is carried out of the church, and, before the convent, delivered to the assembled multitude, who, accompanied by some monks, carry it by turns to the convent of Kisitscha, about three versts from Kasan. Here, with various religious ceremonies, it is set up in the church, and on the following morning the joyful throng, together with the clergy, bring it to Kasan. Crowds of people flock from Kasan to meet it, and the archbishop, and all the ecclesiastics receive it at the gate of the city. The governor himself, supported by several others, carries it through the gate of the fortress to the

cathedral, where the military are drawn up in parade. After performing divers ceremonies, it is placed in this church, and on the following day it is brought into all the other places of worship, and lastly into every private dwelling, in order to diffuse its blessings on all. In the fifth week, on the 28th of July, it is at length brought back to the convent of Pustina, accompanied, as before, by the people.

A similar festival takes place on the 22nd of October, when the inhabitants assemble to pay their adorations to the miraculous image of the mother of God of Kasan.

Last of all, we must mention the name, or saint's day. Every child, according to the custom of the Greek church, receives only one Christian name, and this is the name of a saint, who in the sequel is honoured as its guardian angel. As soon as such a name occurs in the calendar, a festival takes place in the family, which begins with prayers, either in the house or in the church, and concludes with social enjoyments. Relations, friends, and acquaintances, bring or send their congratulations, which are sometimes accompanied by presents; and afterwards assemble, either at noon or in the evening, to partake of a feast, given by the family. This therefore is only a family festival. On the saints' days of the im-

perial family, however, divine service is performed in all the churches in the country, and the heads of public offices sometimes give their dependants a breakfast, to receive their congratulations.

Birth-days are considered less important among the Russians, and they are frequently the same with the name-day, as the child, according to the ancient custom, is often called after the saint whose name is in the calendar on the day of its birth.

Among the customs relative to certain periods of life, those of baptism, marriage, and burial, are the principal.

As soon as a child is born, or on the following day, it is consecrated by a priest, with short prayers, and likewise receives the name by which it is to be called. Its birth is immediately made known to the friends and relations of the mother, who soon pay their visits, and, even in the higher classes, place a piece of money under her pillow*. In a few weeks after, the child is baptized†, and

* This is generally a silver ruble or a ducat, and sometimes a bank note of five or ten rubles. Among the poorer people, the presents are, of course, less valuable.

† If the child is very weakly, it is immediately baptized, otherwise it is generally from two to six weeks old.

this, in summer, usually takes place in the church; but in winter, and among the superior classes generally, this ceremony is usually performed at home, which, in this severe climate, is much better for the infant, especially if it is at a great distance; as, for example, villages without any church. At this ceremony, besides the pope and a deacon, two sponsors, a godfather and godmother, who engage to charge themselves with the care of the spiritual welfare of the infant during his life, are indispensable; more, however, may be asked, but always an equal number of each sex; but the parents, on the other hand, are not allowed to be present. The tolerance of the Greek church even allows Christians of another communion to stand sponsors. This ceremony is divided into three parts. First, the child is made a "catechumen." For this purpose, the clergyman holds it towards the east, breathes on it three times, and marks it three times with the sign of the cross, on the forehead and breast; he then lays his hand on its head, and repeats several prayers; after which follows exorcism, when the sponsors turn their faces to the west and spit. The priest then recites the Nicene creed, in the name of the infant; the sponsors, in answer to the questions, promise perseverance in the faith; and, lastly, some prayers conclude this part of

the ceremony. Then follows the second part, which is the baptism itself. The metal font, which had been previously placed between the priest and the sponsors, has three burning tapers placed round it, the censer swung over it, and the water consecrated with prayers, making the sign of the cross, and pouring some holy oil into it. The child is then again given to the priest, who makes the sign of the cross over many parts of its body, and plunged three several times entirely into the water, the sponsors saying, Amen. It is then covered with a clean shirt, presented by the godmother, and a small crucifix, as a gift from the godfather, is suspended by a silk ribbon round its neck. At this part of the ceremony, the godparents hold burning tapers in their hands. Lastly follows the third part, which is the sacrament of unction (chrism). The infant then receives, in various parts of the body, the sign of the cross, with holy oil, and is carried three times round the font, the sponsors following, without tapers, and repeating the words spoken by the priest. They then return to their places with their tapers, and wait for the tonsure of the child. It is then washed with a sponge, by the priest, who, with a small pair of scissors, cuts off four locks of its hair, which the godfather takes, incloses in a piece

of wax from one of the tapers, and throws into the font.

By this ceremony the child is received into the community of Christians, and the whole solemnity is thus concluded. All those present now generally kiss the cross and the New Testament, and take the infant back to the mother, with short congratulations. Refreshments are usually given to the sponsors, and perhaps some other guests; but large parties are never given, which is very judicious, on account of the mother.

Marriages are concluded in the following manner. As soon as a young man is desirous of marrying, he first endeavours to obtain the permission of his parents or guardians. His choice, however, is not often determined by romantic passion, but by a simple liking, or a prospect of fortune. A female is then sent to the house of the bride, to ask her consent and the approbation of her parents or guardians; if she obtains it, she returns to the bridegroom, who then goes himself to wait upon his intended. On this occasion, the parents of both parties generally agree on the terms of alliance, such as the dowry, the time of marriage, &c. When they have agreed, the betrothing takes place, either in the house of the bride or in the church. For the performance of

this, the bridegroom and bride each invite two spiritual parents, as witnesses (who are generally relations), and two purveyors, to assist in arranging the festivity, in whose presence the priest first gives the bride and bridegroom a burning taper; then, repeating prayers, and burning incense, delivers them the rings, and concludes by pronouncing the benediction over the young couple. After the termination of this ceremony, and sometimes before, the two parties, according to their circumstances, interchange all kinds of presents; and the friends and acquaintance, who have assembled in the house, conclude the day in feasting, diversions, singing, music and dancing. In some weeks or months after this, the marriage is solemnised. On this occasion, the spiritual, but never the natural parents, as also the purveyors, accompany the bride and bridegroom to church. Here they are presented with burning tapers, decorated with coloured ribbons. They are placed before a desk, opposite the altar, and both being called upon to declare, whether they have voluntarily determined on this union, and have not promised marriage to any other person, they receive from the priest, after many prayers, the nuptial benediction, and, after exchanging rings, are led three times round the desk. At this ceremony, the betrothed couple wear gold or silver

crowns, ornamented with precious stones; and after all is concluded, they repair to the house of the parents of the bridegroom. Here they are placed upon a carpet, and received by the father of the bridegroom with the image of a saint, and by the mother with bread and salt. The young pair, kneeling on the carpet, receive their blessing, the mother at the same time strewing hops on the head of her daughter-in-law. A frugal repast, at which the nearest relations, but no unmarried persons, however, are present, concludes the whole.

On the day after the wedding, the female who negociated the marriage goes to the parents of the bride, and is soon followed by the bridegroom, to thank his parents-in-law for their consent to the marriage. After this the young people visit their friends, receive visits and congratulations in return; and, in a few days, have a feast at their own house, to which all their friends, old and young, are invited.

When a person dies, the body is immediately washed and dressed, and laid as soon as possible in the coffin, with the arms crossed over the breast; a prayer, accompanied with incense, spoken over it by a pope, and burning tapers placed round it. A sacristan constantly reads prayers over it till the burial; and among the

higher classes, this is done even in the night, by their servants, who keep watch. On the day of the burial, the friends and relations of the deceased, who are invited, assemble in the morning at his house. The nearest relations are dressed in black; civil officers appear in their uniform, with crape round their arm. As soon as the priest has pronounced a prayer over the body of the deceased, which lies exposed in the coffin, a paper, with the sign of the Trinity, is affixed to his forehead; and a covering, in general richly embroidered, being thrown over, it is carried to the church and set down before the altar, followed by the whole company, who must go bareheaded, even in winter. Several appropriate and affecting prayers are said over it, alternating with short verses chanted by the choir. The pope then gives the farewell kiss, and the friends and relations follow his example with tears and sobs. After this, a confession, in the name of the deceased, is read in the Sclavonian tongue, and the manuscript of it (called Hope and Faith) is laid in the coffin, which is then closed, placed by the friends in the hearse, or delivered to the bearers, accompanied by them, bareheaded, to the burying ground, the clergy singing psalms, going before. When it is let down into the grave, the face being always turned to the east, the priest throws three

shovels full of earth, crosswise, over it; and while pronouncing the last blessing, swings the censer; whereupon, after a short prayer, and after each of the attendants has thrown a handful of earth upon the coffin, the grave is filled up. At the end, alms are generally given to the poor. They then return to the house, and take a breakfast, more or less costly according to the difference of rank, a glass of mead or other liquor being drunk by the company to the memory of the deceased.

Deceased persons, of the superior classes, are sometimes deposited in a neighbouring monastery, where a breakfast, consisting of dishes usual in Lent, is set before the clergy, and the attendants who choose to partake of it; while others go to the house, to the ordinary breakfast, which is composed of greater variety. In the houses of the rich, prayers continue to be read, perhaps for weeks together, in the chamber where the corpse is placed. Friends, who visit the family for some days after, are dressed in black. At the end of three or six weeks, and at the end of a year, the relations, accompanied by a clergyman, repair to the grave, to pray there, or to have masses read in the churches, on which occasion presents are made to the servants of the church, and to the poor.

MANNERS AND CUSTOMS

OF

THE TARTARS

IN THE GOVERNMENT OF KASAN.

BY DR. ERDMANN.

Before the provinces, which constitute the present government of Kasan, were conquered by the czar Iwan Wasiljowitsch II. in the middle of the sixteenth century, the Tartars were the ruling nation, and are even now pretty numerous. It may be assumed, that about 230,000 individuals, of both sexes, are resident here, an eighth part of whom are baptized, while the others have remained faithful to Mahometanism. They live partly in towns, where they carry on trade, particularly in tea, Bucharian goods (shawls and handkerchiefs), European stuffs, &c.; or have manufactories, as of leather and soap; and partly in the villages, where they follow agriculture, breeding of bees and cattle. They are the most numerous in the circles of Kasan and Tetjusch.

The men are, in general, of a middle size, muscular, but not fat; their head is oval, the counte-

nance fresh coloured, the features handsome and regular; their eyes, which are mostly black, are small and lively, the nose curved, and their lips thin; their hair is usually dark, and their teeth white and even; they are rather slender than robust; their manners full of decorum, and their motions dignified and easy. On the whole, the same may be said of the women, only the expression of their countenance is lost, in a great measure, by their mode of living, and their other natural charms are disfigured by paint and ornaments. The constitution of the Tartars is very good, and their way of living, on the whole, conformable to nature, which protects them from many noxious external influences.

The character of these people is frank, hospitable, good tempered, and peaceable; they have a nice sense of honour, study convenience, but are not idle, and are fond of order and cleanliness. Their kind disposition would certainly be made more manifest, had not the conquest excited distrust and national hatred, and were not their self-love so often mortified by contemptuous treatment*, or even animosity

* Unfortunately, the common Russian is too much in the habit of calling the Tartar "a dog," in the street, if he happens to be in his way, and does not instantly make room for him.

and disgust excited by the oppressive conduct of bad civil officers. Under such circumstances, it is not surprising if the Tartar is not always honest in his dealings, or appears malicious; he thinks he is only using reprisals. They are generally more frank and courteous towards strangers, than towards the Russians.

The natural ability of these people, and their love of instruction, would have enabled them to attain a much higher degree of intellectual improvement, did not Mahometanism prevent their making any progress. The belief that the Koran contains all wisdom, leads them to despise other knowledge; they study it, and every thing relating to it, with zeal and perseverance; and we always see men, among the boys and youths in their schools, partly to instruct the children, and partly to improve themselves under the head master. I will describe a Tartar school, according to my own observation. The most considerable part of the building is a large room, in which the greater part is raised a couple of steps higher than the other. The masters and scholars sit on this elevated part, with their legs crossed. The masters sometimes sit on leather cushions, and have boxes for books, writing materials, and other necessaries, standing by them. School generally begins at break of day, and ends

towards evening. The instruction given consists of reading and writing, explanation of the Koran, lectures on other religious works, and prayer; in the higher schools, the Bucharian, Persian, and Arabic languages are likewise taught, as also a little arithmetic. Occasionally, they practise mechanical trades; for example, shoemaking, and then a board is placed over the master's seat to hold the implements. On Thursday they recapitulate what they have done in the week; and on Friday no lessons are given, it being a holiday among the Tartars, something similar to our Sunday. Reading aloud is the greatest art, for it is a declamatory recitative, and requires a good voice. This recitative is the object at which the public teachers of religion, or Mullas, aim, and which they practise till arrived at manhood. Those who desire a thoroughly learned education, generally go to the celebrated school at Gargali, a village about 12 versts from Orenburg, and sometimes even to Bucharia.

The boys are generally sent to school at the age of seven or eight years, and the ordinary course of study is completed in five years. Those who intend to become teachers, remain, as I have before observed, a longer time. Poor, and orphan children, remain in the school, and sleep

in the lower part of the great room. To superintend them, the assistants of the master, chosen from the elder scholars, remain with them, and are themselves afterwards appointed teachers. These either sleep in the room, separated from the scholars by a curtain, or in a side room, or in a wing of the house. Those who live here keep house in common, each paying his share of the expence; but one is chosen by lot as manager, to cook the provisions for the whole. They have only two meals in the day, at eight in the morning and six in the evening, and eat with their fingers; but they say prayers as usual five times a day. Such an establishment is wholly supported by voluntary contributions; and the master, who does not even reside in the school-house, has no certain income, but only receives presents from the scholars, such as flour, bread, honey, &c. If one of those resident in the house is taken ill, he remains there, and the master is physician. Idleness and ill-manners are punished either by striking the transgressor with a rule on the soles of the feet, or whipping him, or putting him under the floor of the school-room. There are five such schools in the city of Kasan, and one in every village. The girls, who are educated at home, are instructed in reading, writing, sewing, and embroidering on leather, with gold and silver.

The teachers of religion, who are, properly, the men of learning, generally complete their education at Bucharia.* The principal of them is the Mufti, who resides at Uffa, and is paid by the crown. He is, at the same time, chief judge in ecclesiastical affairs, and has in his court three or four assessors, who are summoned from the different provinces. If one of them is withdrawn, and he desires another, he is chosen by vote. Under him are the Achuns (chief priests), of whom there are two in the province of Kasan, residing in the city itself, and the Mullas (priests). The latter are chosen from the merchants, but as soon as they have entered upon their offices they leave off their trade, which is then generally carried on by their sons. Previous to their admission, they are examined by the Mufti: they have, however, no fixed salary, but live on the donations of their communities. They regularly receive a hundredth part of all marriage portions. Properly, every Tartar is bound to give ten hundredth parts of his property annually to the priests and the poor; however, he generally gives only two, or two and a half hundredth parts. This is done,

* In Bucharia itself there are three high schools, where every student has his own apartment. The instructions are given between the prayers in the morning and at noon.

on the 22nd day of the month of Ramasan. To every mosque there are two, and sometimes three Mullas, who, besides their usual employment, have to instruct those who are intended for schoolmasters, particularly in the country. Lastly, each mosque has one, two, or even three Asantschi (in Turkish Muezzin), who perform the duties of sacristan, and summon the people to prayer, which is done five times in 24 hours. They ascend the minaret the first time at sunrise, the second time at one o'clock after dinner, the third time at four, the fourth at sunset, and the fifth at nightfall. In the northern parts, where in the middle of summer there is no night, the fifth prayer is omitted. Now it is true, that according to astronomical calculations, there is no night in the government, or, more properly, in the city of Kasan, for 62 days; namely, from the 10th of May to the 11th of July, old style. Notwithstanding this, the two chief priests residing here are of different opinions, and one of them causes the nocturnal prayer to be said, while the other allows it to be omitted for 40 days. The proclamation consists in a prayer, which is delivered from the minaret, in a slow and mournful voice. The words of it are as follows: "Allah is the highest," (this is repeated four times.) "I testify that there is no other God, but Allah," (is repeated

twice.) "I testify that Mahomet is the ambassador of Allah," (twice.) "Come to prayer," (twice.) "Come to salvation," (twice.) "And Allah is the highest," (twice.) "There is no god but Allah!" At the summons to morning prayer, after the words "to salvation," the Muezzinn repeats twice, "Prayer is better than sleep." At this call every Tartar repairs to the mosque, when a Mulla reads a passage from the Koran, or recites an ancient prayer, and sometimes also holds a short discourse.

The mosques themselves are oblong rectangular buildings of wood or stone, of different dimensions; between eight and sixteen fathoms long, and half as broad, with moderately inclined roofs of wood, tiles, or iron, on the top of which is the minaret. This is a little tower, open on all sides, surrounded below by a gallery, and with a gilt crescent on the summit. The height of the building to the roof is from three to six fathoms. The lower part consists of repositories for wood and other necessaries. It has but low doors, and some small windows. The upper part, on the contrary, has windows of the same shape as ours, regularly arranged round it. Two flights of steps, at the end of the building, and on the outside, lead up to it. We first enter one or two ante-rooms, in which the faithful leave their shoes or slippers,

and come to the principal division, which is generally of a pretty square form, and extends the whole breadth of the building. On the left hand of the entrance there is usually a large square stove, of coloured glazed tiles; over the door of the great mosque, is the choir, and opposite to this is a niche, in which the Mullas sit.* In the right hand corner, opposite to the door, there is a small plain desk, raised a few steps. The floor is covered with wrought carpet, or, at least, with a straw mat; and we sometimes see, on the walls, square pieces of black or coloured stuffs, bearing inscriptions, said to have been brought by pilgrims from Mecca.

As soon as prayer commences, the Muezzinn advances into the body of the mosque, and exclaims: "Bow yourselves according to the example of the Mulla; for such is the law." The people having loosened the end of the turban, which they suffer to hang down their backs, sit down in a row on the floor, cross-legged, according to the oriental fashion, with their faces turned towards the niche, the Mulla immediately before them, in the same position, and looking the same way. In a mournful and singing voice,

* This must be the south side, which is turned towards Mecca.

he recites some Suras, before each of which the first words of the Koran are repeated. At these words, every body present, as well as the Mulla himself, bows twice to the earth, so that the forehead touches the ground. Every one repeats, in a low voice, the words of the Mulla, letting his open hands rest upon the thighs; but as soon as the prayer for Allah's blessing is said, they hold their hands close to the face, and then pass them slowly over it. During their devotions, they, altogether, alternately rise and sit down again. At the conclusion, all, at once, turn their heads once to the right, and once to the left, looking at their shoulders. By this, the guardian angels, who sit there, are called upon as witnesses of the performance of their prayers. If a Tartar is unable to go to the mosque, he says his prayers at the same time, on a carpet, at home. According to the law, the morning prayer is accompanied with four inclinations to the earth, the prayer at noon with ten, and that in the evening with eight. The prayer at sunset orders them to incline five times, and the nocturnal prayer ten times. Any one who has neglected prayer, either on account of sickness or business, makes up for it the next time, or on the following day; this he does immediately after public prayer, by seating himself farther back, and repeating the

prescribed inclinations, speaking in an under voice. Lastly, he, who has neglected to do this, must at least make up, in the great fast, for all that he has omitted before. These prayers are performed with a degree of devotion, in which nothing can disturb the musselman; no noise, no circumstance draws his eye aside; and I do not think that even a fire in the neighbourhood would trouble his devotions. Whoever has any real sense of religion, is filled with a holy awe at this sight, for he sees his fellow-believers put to shame by the Tartars.

As soon as a child is born, it is washed, wrapped in clean linen and laid on a table; the Mulla then comes and says the words which the Muezzinn calls from the minaret. On this occasion, the child receives its name, and the intimate friends of the family are regaled by the parents.

When a person intends to marry, he first sends a female into the house of the young woman, to ascertain her inclination, and to agree upon the terms; for they treat about the sum of money which the bridegroom is to give, and also the portion which the bride is to receive from her parents. If they agree, the bridegroom makes a formal offer. According to the law, he must never have beheld her face, or indeed have seen

her at all, but only know her from the accounts of others. They, however, not unfrequently find an opportunity to meet previously. If the bridegroom has paid the stipulated sum, which is very different according to the fortune of the bride, (among the poor people, perhaps, only 50 rubles, and among the rich 1,000), the day of marriage is fixed. The wedding is first kept for three days together, by all the women of their acquaintance alone, and then, after an interval of two days, by the men for an equal time: this last festivity begins by the consecration of the bridegroom, by the Mulla, but without the bride, by which the affiance is completed: three more days festivity intervene before the marriage itself takes place. I will describe such a marriage, at which I myself was witness; for, being a Christian, I obtained permission to be present, where, according to the law, no Tartar can have access, *i. e.* in the meeting of the women. In general, it is not easy to gain admittance: one must be intimately acquainted, though foreigners obtain it much sooner than Russians.

On Sunday, the 11th of December, at three o'clock in the afternoon, accompanied by a few friends, I went to the house of the bride, in the new Tartar suburb of Kasan. We found her in a small room, on the ground floor, with her

relations, who were dressing, and adorning themselves with patches for the ceremony. After saluting, and observing them for a short time, we went up into the best room, which was not large. Opposite the door, and on the right hand, were two windows; on the left side was a stove, formed of Dutch tiles, near which a cradle was suspended. Under the ceiling there were a couple of lines to hang linen on; and before the windows were clean towels with red borders: the floor was covered with a carpet; and before the windows opposite the door were two small eliptical tables, covered with cloths of coloured calico; round these were placed long coloured cushions, on which the female guests, more than 70 in number, sat, in the oriental fashion. They were in their holiday dress, with coloured handkerchiefs round their heads and necks, silk caftans, embroidered with flowers and gold, with long sleeves, and for the most part adorned with coins round the neck and breast. They sat rather formal and motionless, most of them looking down in silence. Not long after our entrance another female came into the room; she wore on her head a coloured silk handkerchief, which hung down her back, and over it a fur cap, similar to those worn by the men. After leaving her slippers at the door, she saluted all the company

with Assälahmüihalcikum, and then she offered each of us her hand, according to the Tartar fashion. It was not till she had done this, that she took off her cap, put her upper handkerchief, from her head, on the line with the others, and sat down in the circle at a table.

Some time having elapsed, an elderly matron rose from her seat, and, approaching the door, began to pray. This was the mother of the bridegroom. She alternately prostrated herself in the Tartar fashion, touching the ground with her forehead, and seated cross-legged, holding her open hand at a small distance from her face, saying her prayers in a low voice. After she had finished, all the company sat still for some time, then rose together, and said a prayer in common, with similar gestures; and then resumed their seats at the tables, to partake of a dark coloured soup, the composition of which I do not know, with wooden spoons, out of earthenware plates. Each of the company then put on their headdress and slippers, and hastened to the street, where 16 sledges, mostly drawn by one horse, were waiting for them. The cushions abovementioned were laid in the sledges, and about five o'clock the company drove off in procession to the house of the bridegroom, situated in the old Tartar suburb, about a verst distant. We fol-

lowed them in our sledge, and found another company of women already assembled, which, by this accession, was increased to 90 persons. They divided themselves into three small rooms adjoining each other, and sat down, as above described, at little tables, so that 10 or 12 women formed a close circle round each. Four such tables were in the room on the right hand, and three on the left. In the narrow middle room there was only one, which was higher, surrounded with chests and benches, on which the guests, because the space was so confined, sat down in the European fashion. After a rather dull conversation, one of the relations of the bridegroom appeared, bringing the presents intended by him for the bride, which were laid on one table after the other, to be inspected by the company. They consisted of different articles of female attire, of chintz, but for the most part of silk brocade, embroidered with gold and silver, gold medals and silver clasps, worth altogether above 1000 rubles. Each circle examined attentively what was laid before them, and gave opinions more or less favourable; on which every woman gave the female who negociated the marriage, one or more rubles, which were put in a box for the bride. They were extremely pleased that we did the same, and were from that moment particularly obliging

to us, and even said, that the bride would certainly be happy, as Christians had contributed to her marriage portion. Immediately after this, supper was brought up. They first placed on each table a wheaten loaf, cut in slices, a salt-cellar, and as many earthenware plates as there was room for, generally six; with as many spoons on them as there were persons present (10 or 12), and a plate of rice stewed in butter, which is the favourite dish in the East. Before this was touched, each of the company took a little salt out of the salt-cellars with their fingers, conveyed it to their mouth, then helped themselves to some rice, which they ate very fast. After we had partaken of this, standing, we were invited into the adjoining room, where the brother of the bridegroom, who was not permitted, any more than any other man, to join the company, treated us with some excellent tea and düsh. We then returned to the women, who, meantime, had finished some dishes, in order to partake of the remainder. The following were served up in our presence: minced chicken, mixed with fish and pickled cucumbers; sourkrout in quas, bilberries mixed with honey and water, a baked rice pudding, sent from the house of the bride, and afterwards düsh. All was cleanly and well flavoured; but there were neither knives nor forks used, but

only spoons, and sometimes their fingers; and the plates, one of which generally served two persons, were never changed. They drank quas. As soon as the meal was over (about seven o'clock), the company separated. The conversation had become, during the repast, much more lively and animated; but the volubility of the women showed itself on going down into the court-yard; for it was pretty long before they got into their sledges and drove home.

Thus ended the fête of this day: but it had been kept in the same manner the day before, and was to be repeated on the following, with this difference, that the third day the guests were to expect tea. On these three days, no man (for we, as infidels, were considered of no importance), was allowed to be present; and every thing was done by the women. After this, the turn for feasting came to the men, from which the women were obliged to absent themselves; this did not, however, take place immediately, but after some days interval, namely, on the 16th of December. In order to see this part of the ceremony, we repaired, at four o'clock on the appointed day, to the house of the bridegroom, where we were very hospitably received. They soon brought an European table into the room, gave us chairs, in our fashion, and handed us tea, little meat patties

fried in butter, confectionary, and cedar kernels, and afterwards a kind of mead prepared from honey. We had scarcely finished this repast, when the Tartar guests assembled in the next rooms. We would willingly have joined them, but were detained on the pretext that there was not room enough; probably, however, because they did not wish to be under any constraint. We therefore contented ourselves with looking through the window in the door of the partition, before which a curtain was hung, on account of the women, to observe the conclusion of the ceremony.

As soon as the Mullas entered, the company began to pray. The ceremony was the same as in the mosque. After praying about half an hour, they prepared for departing, and drove off in sledges to the house of the bride. We again followed the procession; this time, the way being very narrow, we pressed among the company, who already filled the above described room in the house of the bride, as also the adjoining apartment. At the three low tables sat the Mullas and the principal guests, without cushions, on the carpet; others sat on benches at a higher Russian table, in the ante-room, and the remainder, for whom there was no room to sit, stood in the intervals. The Mulla, who solemnized the

marriage, now delivered, sitting, but with much dignity, a short discourse, in which he pronounced a benediction on the absent betrothed couple. After he had concluded, several of the guests departed, and about 60 persons remained in both rooms, who immediately put money in a dish; many of them proved their liberality by the pieces of gold which they put in. We, too, contributed to this dowry. After the bread, salt and plates, were brought in, every one prayed in silence, holding his hands before his face; and putting a little salt into his mouth, commenced the repast, which consisted of five dishes. The first thing served was honey and butter, both of which were in separate dishes; the company first taking a spoonful of honey in their mouth, and then a piece of butter, with the hand, eating bread with it. The second dish was rice and chicken, the third a rice pudding with mutton, the fourth mutton with horseradish, and the fifth was strawberries and raspberries, prepared in a manner which we shall describe below, mixed with honey and water. After this, mead was handed round, and the entertainment concluded. After a short mental prayer, the company rose, and drove home. All this was done with so much decorum and silence, that we need not wonder if the Tartars look down with contempt or pride

on the infidels in their neighbourhood, whose entertainments generally end in drunkenness. The marriage was, indeed, solemnized by the speech of the Mulla; but the bride had not made her appearance on that occasion, though every thing had taken place in her parent's house, and the bridegroom had been present at the repast. We found her again down stairs with her relations, not painted, very pale, and in a white night-cap, such as are worn among us by the men, and in an ordinary cotton caftan. According to the account of her relations, she was not allowed to go to her husband till three days later, during which time the male guests were to meet, as we have before described.

When any person is dying, it is the business of the Mulla to read a certain chapter out of the Koran, after which others continue to read from the Koran, till death ensues. After death, the body is washed, and the event is signified to the relations and the Mullas, who assemble to the burial, which ought to take place in eight hours, but is sometimes deferred till the next day. The body is wrapped in two or four white linen cloths, and lifted, by means of three towels, by six men, on a bier, covered with green cloth, or quilts; wearing apparel is laid on it, and, after a prayer spoken by the Mulla, it is carried to the mosque,

his acquaintance following. The bier is put down before the door, where prayers are again said, and they then proceed. When they arrive at the burial ground, the mourners place themselves in seven rows; the Mulla recites prayers, during which the attendants bow twice to the ground. The nearest relation steps into the grave, and places the corpse in the proper position. The grave consists of a broad pit, on the west side of which there is a niche, in the form of an adit. Into this the body is shoved, so that the head is to the west, the feet to the east, and the face to the south (Mecca). As soon as this is done, the niche is closed with bricks; and each of the attendants having thrown three small stones, or three handfuls of earth, into the pit, it is filled up. The Mulla then goes again to the grave, calls the deceased by name, and says: "Our God is Allah; our religion, Mahometanism; our book, the Koran; our prophet, Mahomet the elect, upon whom be God's grace and blessing!" Lastly, the nearest relation calls three times over the grave: "I died a musselman!" and distributes money among the poor, during which the attendants disperse. The grave is frequently inclosed, in the sequel, with a brick wall, four feet high. The memory of the dead is long held in honour, and the grave visited by the relations, on the

anniversary of the death, often after an interval of many years. Thus I once saw an old Tartar praying alone in the burying ground, by a grave overgrown with bushes. I asked him who was buried there? he answered, "My mother;" "And when did she die?" "forty-five years ago."

In their ordinary mode of living, the Tartars are cleanly and temperate. The usual dress of the men is a linen shirt, a long close-fitted under garment, of coloured striped half silk stuff, wrapping over in front and fastened with bows of ribbon, long pantaloons of chintz (in the country linen); boots with thin soles, or rather stockings, of green or yellow morocco, or sheepskin, and slippers with low heels; a Bucharian party-coloured upper garment, like our morning gown, made of cotton or silk, which is confined round the waist by a cotton or silk shawl. On their heads, which are shorn close, they wear a round cap embroidered with gold, which fits tight; over that a turban, the centre of which is a pointed cap, with a long piece of calico wound round it. In the country, and among the poor, it is, however, now often exchanged for a fur cap; as, in general, during hard work and in winter, many Russian articles of dress, for instance, a sheepskin cloak, disfigure the genuine costume. The beard is suffered to grow, but commonly it is not

very thick. Those Tartars who are in the Russian service, frequently dress themselves entirely in the European fashion, and at least, when in the army, are compelled to do so: this dress, however, must be exchanged for the oriental, every time, on entering the mosque; and the officer, at other times dressed in uniform, wearing perhaps orders of knighthood, appears here in a coloured caftan, with a turban on his head, and with leather stockings and slippers. The women wear under garments of coloured stuffs or silk, generally with long red sleeves, hanging over their hands; chintz pantaloons, leather stockings and slippers, like those of the men, but with very high heels; on the breast, over the slit of the shift, which is bound with gold or yellow ribbon, hangs a stomacher of coloured stuff, fastened round the neck by a ribbon. Their upper garment, which is generally coloured, and frequently very costly, is made of flowered brocade, lined with silk, fastened in front with some elegant clasps; but it is often thrown over the head, with the sleeves hanging loose, and held close with the hand before the face. Among the poor people, as also during their daily work, their garments are made of cotton stuffs, and in winter of cloth. The head, neck, and shoulders, are concealed by a large white shawl, which is ornamented on the

forehead with a golden tassel. Over this is thrown a dark silk one, interwoven with flowers of gold, tied behind, and the corners, which are ornamented with gold fringe, hang down before. In full dress, a string of coloured glass beads, to which large triangular, square, and circular plates, gilt balls (nuts), or silver and gold coins, are suspended, hangs over the right shoulder, and is passed under the left arm. To this ornament there is sometimes appended a cylindrical vessel for perfume, and which is frequently very expensive. Lastly, they wear bracelets, ornamented with pearls and precious stones, especially turquoises, gold rings, ear-rings, with jewels; and those young women, who do not yet conceal the head with a shawl, also wear necklaces, to which small silver coins are suspended.

Painting is universal among the female sex. They generally use red Chinese paint, and white lead; and also cover their faces with circular, crescent, and star shaped patches, of various sizes, of which there are sometimes fifty on one face. Those who have naturally fine white teeth, dye them black, by rubbing them once every week with a powder of gall apple, and iron vitriol; and the nails red, by applying to them, from time to time, a poultice of the herb balsamine, crushed together with the flowers and powdered

alum, which is suffered to lie on for a night. It is evident, that the dress and ornaments of the Tartar women are by no means favourable to activity and economy, and for this reason the poor, and country women cannot strictly adhere to it, at least when employed.

The dwellings of the Tartars generally consist of wooden houses, in the middle of which is a passage, with a room on each side, one for the men, and the other for the women. Round these rooms are broad benches, covered with carpets, or mats and cushions, on which the inmates sit and sleep. Indigent families, particularly in the country, frequently reside together in one room; but then the seats of the women are separated by a curtain from the other part of the room, generally behind the great stove, and which serves at the same time as a kitchen. This stove has no chimney, but does not fill the room with smoke, like those in the Russian peasants' houses. The more opulent, however, live in larger houses, and the merchants in the city frequently reside in handsome stone buildings. These have large beds with curtains, and detached kitchens. About the dwelling houses are court-yards with stables and offices; nay, in the villages there are often small houses for the reception of strangers. On my

travels, I once passed the night in one of these detached dwellings, and found it very comfortable on account of its cleanliness; otherwise you are obliged, in the country, to put up with the sitting room. This cleanliness, however, is very different according to the degree of wealth; yet, under the same circumstances, it is greater among the Tartars, than any other nation of these parts. It is much promoted by the law which prescribes numerous ablutions during the day, on account of which there is a bath attached to every dwelling house, as well as by the temperance which the Koran prescribes.

This last circumstance leads us to their diet, which is very simple; but yet more diversified than among the Russians. It consists of all kinds of meat and vegetable diet; only they do not eat pork and crabs, but, on the other hand, the poor people eat horse-flesh. They eat a great deal of rice, and are very fond of honey; drink honey water, or a kind of mead, besides milk. They have adopted from the Russians the use of quas, but not that of brandy, because their law forbids them to drink strong liquors; yet this prohibition is transgressed by those whose commerce leads them to much intercourse with their neighbours, and sometimes even by the women. Persons in good circumstances, especially the

merchants, prefer, above all things, tea, with no addition but sugar, and generally the best kinds, because they carry on a great trade with it. They drink it so copiously, that even a visitor can hardly take less than twelve or sixteen cups; at least, he is always pressed very much if he has not taken that quantity.

Of their peculiar dishes I will mention three, because they are really very savoury. The first is *bloof;* this is prepared of rice, which is first washed, and then boiled a short time in water. It is put half raw into a sieve, they let the water run off, and then wash it several times in cold water. Large slices of onion, with strong gravy and spices, (pepper, cloves, cinnamon, cardamon, &c.) are put into a stewpan, minced chicken added, and then the rice strewed at the top in a thick layer; they then make a hole in it, which they fill with raisins, and pour boiling hot butter over it; lay double paper over the stewpan, cover it with the lid, and put it into a hot oven till it is done. It is taken out, and the whole stirred up and eaten.

The second is called *düsh:* they take 20 eggs, 10 spoonfuls of cream, and enough wheaten flour to make a soft paste; this they form into long square pieces, which they cut into dice about a quarter of an inch thick. These dice are

stewed in melted butter, then thrown into skimmed and boiled honey, and while still warm, made into a conical shape upon a dish, lastly covered with large raisins, and sometimes with confectionary; after cooling, it is firm and easily cut: this is eaten at the dessert.

The third is *kahk*. Take cherries, strawberries, raspberries, or black and red currants, boil them through a cullender or sieve; then warm a long smooth board and butter it, spread the fruit equally over it with a spoon, and let it dry in the sun. When dry it comes off in the form of a transparent stuff, which is rolled up and kept like linen. When used, small pieces are torn off, and put into hot water till it is dissolved; preserved Bucharian fruits (such as dates, figs, white raisins, &c.) are added, and served as a compote.

The Tartars have many fasts. In these, they are not merely prohibited from eating meats, but all food whatever, even drinking, and taking snuff, as long as the sun is above the horizon. After sunset, however, they may eat what they please. The following persons are exempted from fasting: first, invalids, who, however, must make up for it when they have recovered; secondly, children under twelve years of age, (though girls of even nine or ten years begin to

conform to the law, though not so rigorously); thirdly, women lying in, who are, indeed, not allowed to perform any devotions. But all that they have neglected must be made up for, afterwards; besides, every one, during the fast, must make twenty prostrations more, every day, than usual. The principal fast is the month of Ramasan, which lasts thirty days. As the year of the Mahometans is shorter than ours, this month happens successively in all seasons. This fast is therefore extremely inconvenient, when it occurs in the heat of summer, and the labours of agriculture must be carried on without drink. The most important day is the 26th, because, the night preceding it is that in which the Koran is said to have come from heaven. Nobody goes to rest, and all the prayers neglected during the year, or at least during the fast, must now be made good. From this time to the end of the month, they give the alms prescribed by the law; and at the conclusion of the fast, the people in the villages generally amuse themselves with discharging fire-arms, previous to the next holiday, Ramasanbairam, when all prohibitions with respect to diet cease. At this festival every body voluntarily gives alms, according to his ability. Nine days afterward, the Kurban fasts begin; which last ten days: at the expiration, they celebrate the Kur-

nbairam, (being the day on which Abraham as going to sacrifice his son). On this day, very body kills a lamb, or a sheep, and the poor people generally have one given them by the rich, for the purpose. When the weather permits, they pass the whole day out of doors, and even prayers are said in the open air. On this occasion, all difference of rank is dispensed with.

They are not so strict in observing the seven days' fast (Aschura), in memory of the death of Caliph Hussein IV.

The Saban, *i. e.* the plough, is not a religious, but a rural, festival, and is therefore not regulated by the calendar, but by the season. It is celebrated in the month of May, when the seed time is over, in the following manner. Six versts to the south-east of the city, there is a hollow valley, on the left side of a declivity, bounded by low shrubs. In this place the Tartars assemble in great numbers every afternoon in this week; while the women and girls, under less restraint than usual, sit in their open or half covered vehicles, or in groups on the ground, behind the thicket, chatting, and drinking tea. The men then form a circle, and two or four of them advance to wrestle. After this, there are horse races. Coloured handkerchiefs of various sizes are suspended to the branches of a tree near

goal, as the prizes, which are delivered to the horsemen as they arrive, the first receiving the most valuable. Booths for refreshments are erected round the plain; and on both sides, Russians, and other strangers, on foot and in carriages, are collected in great numbers as spectators.

Other amusements are not allowed among the Tartars, though they sing and sometimes dance, and several of them also play a musical instrument—for this is no reproach. On the other hand, those who lead an immoral life are reproved by the Mulla; or those who have been guilty of any crime, or committed suicide, are denied an honourable burial. In other respects, the Tartars are under the Russian jurisdiction, and are free. There are, however, some princes among them, whose ancestors received from the Czar Iwan Wasiljewitsch II. grants of subjects and land, which they are allowed to dispose of again, but only to Tartars. This personal servitude appears, however, to be very limited; and their princes, who are but little above the others, and carry on trades and professions, are not recognized by the Russian government, but taken for recruits, as well as the rest of their countrymen.

THE GROUPS OF ROCKS,

NEAR

ADERSBACH IN BOHEMIA.

It is well known that sand-stone has a tendency to split perpendicularly, and as it at the same time frequently forms very thick horizontal strata, masses arise which resemble cubes and hewn stone, which, in places where the mountain is bare of earth and vegetation, seem to be placed on each other by art. When the perpendicular separation prevails, the forms are mostly columnar. The little solidity of most sand-stone makes it very easy for the waters, when they have once penetrated those clefts, to open themselves a farther channel; and thus, connected with the effects of the falling of those masses, which are undermined by the water, or have lost their equilibrium, the sand-stone mountains receive those strange and wonderful forms which every where render them an object of admiration.

Every thing, however, that may be said respecting the singular forms of the sand-stone moun-

W. Gauci fecit.

GASTEIN. NEAR ANDERNACH.

form, as it were, a wood of stones standing close together, and numerous mazes, through which it is impossible to find your way without a guide. Most of these pillars are 100 feet in height, some 200 and more; some look like pillars, towers, and walls; others are so regularly rounded at the top, and so smooth at the sides, that they seem to have been hewn by art. Others are bounded by curvilinear planes, and their projecting tops every moment threaten to overwhelm the traveller. Several of them are broad below, and become smaller towards the top; but there are others which retain an equal thickness. The most remarkable, on account of their form, are, first, the inverted sugar-loaf (the name of which points out its shape); it is a rock resting on a very narrow base, in a small basin of water, which spreads more and more towards the summit; and, secondly, some single columns, which rise perpendicularly above those around them, like chimnies.

The usual guide among these groups of rocks is the game-keeper, who has the key to the entrance, which is closed by a door. "We first," says a late traveller, "entered a foot-path, formed by the crumbled sand of the decomposed stone, which is sometimes twenty, and sometimes scarcely three feet broad, and leads, with innume-

rable windings, between perpendicular columns and walls. In some places we were obliged to pass through clefts, where the rocks join at the top, and where there was hardly sufficient space to pass through sideways. Like the *sugar-loaf*, many other masses have received their name from their similarity to certain objects; for instance, the *palace*, the *nun*, the *pulpit*, the *death's head*, &c. This part of the mountain is considered as the most interesting.

"The path leads sometimes over bare sands, sometimes over moss and plants, and here and there between pines, and in several places we were obliged to step over the little brook, which runs with numerous windings. In about half an hour we reached a very agreeable, cool place, adorned with pines and various plants, but entirely surrounded by high rocks. It is rendered still more delightful by the murmurs of the crystal brook which here issues from a kind of sluice. A table with a bench and some stone seats, have been placed for the accommodation of travellers, under two lofty pines, by the side of a clear and cool fountain.

"Proceeding by a very inconvenient way over heaps of sand, detached from the rock, which, like the ashes on the side of a volcano, lies so loose, that it slips from beneath the feet, we as-

ended into a cleft. The fatigue of climbing up is rewarded, as soon as you reach a projecting part, by the sight of a very picturesquely situated basin, and a singular grotto, with a beautiful waterfall. The water falls first about twenty feet over the hollow wall of the rock, and ripples then over small breaks, till it at last reaches the reservoir below.

"On leaving these clefts, the guide generally discharges a small canon near a little summer-house, the echo of which, reverberating through the whole labyrinth of rocks, produces a very peculiar effect."

For the accommodation of travellers visiting these rocks, a spacious inn was erected several years ago, where they find good lodging and entertainment. To preserve the memory of the visit of remarkable strangers, the landlord, by order of the magistrate, keeps a book, in which all the guests are requested to inscribe their names, and, if they are willing and able, an appropriate sentence or verse. In case of a continuance of bad weather, music, dancing, and other amusements are provided. The resort of travellers is sometimes so great, that the inn cannot afford sufficient accommodation, and they are obliged to be lodged at the houses of public officers, or other inhabitants of the place.

The observer of these singular masses of rock immediately asks himself how they have arisen. It is highly probable that they owe their origin to the effects of water. The whole, some hundreds, or thousands of years ago, was a solid mountain; the streams of water gradually penetrated the clefts of the interior, washed away the looser part, and thus brought it to its present form. It is unnecessary to suppose that this was done all at once, by a great and violent flood; this would rather have reduced the whole mountain into confused ruins, than have given it its present regular, columnar appearance. The process was probably slow and gradual. We should call to mind the subterraneous structures which the stalactites have formed, in the course of ages, in many caverns.

"We are always inclined," says Zöllner, very justly, "to conclude that what we see in nature at one view, has also arisen at once, as we now see it. But full as much, and perhaps even more than is effected by sudden revolutions, is produced by the slow, silent change, on which nature is incessantly employed before our eyes; but whose works do not excite our astonishment till after the lapse of centuries, because the fancy then adds to the acting power, as much in extent as it deducts in time."

If we consider the extreme softness of the Adersbach sand-stone, which is such that it may be easily crumbled with the fingers, and the rather low situation of this rock, compared with the surrounding country, it is easy to conceive how the rain and atmospheric vapours, falling on the higher parts, must find a vent in this soft sand-stone, and gradually collect in the hollows. The clefts already existing allowed the water to penetrate: when it froze in the winter time, it burst, in places, the compact but easily yielding masses; and when it thawed in the spring, it sought an issue in the crevices, and enlarged them, by carrying with it the loosened sand. By degrees the rents became deeper, fresh ones arose from the causes above mentioned, when the moisture from several clefts collected, washed considerable hollows, and formed chasms, into which the adjacent side walls, being deprived of their support, fell down. Thus narrower and broader clefts were formed, the bottom of which was covered with the sand of the decomposed stones, so that, in many places, we find a path upon which we can pass through these groups.

What we even now observe, proves that all this has been formed by a slow process. The water still makes new passages, undermines pillars already standing, and divides connected

resides into columns. Zöllner mentions another [illegible] mountain, a quarter of a mile from Adersbach, on the road from Waldenburg, near the village of Merkelsdorf, "which is just now beginning" (Zöllner wrote this 30 years ago) "to divide into clefts similar to that at Adersbach;" and many persons who had been long acquainted with the country, assured him, that they had plainly observed the hollows to grow deeper from year to year. Perhaps future ages may see here a second labyrinth, like that at Adersbach.

PILGRIMAGES IN THE EAST,

In the Years 1815 *and* 1816:

BY OTTO FREDERICK VON RICHTER.

The author of these pilgrimages was born on the 6th of August, 1792, near Dorpat, in Livonia. After having finished his education at home, he went to Moscow in 1808, where he applied to the study of the modern Greek; the following year, being desirous of learning Persian and

Arabic, he was induced to go to Heidelberg to profit by the instructions of Mr. Wilcken, professor of the oriental languages. Excursions to Italy and Switzerland were followed by a residence at Vienna, where an intimate acquaintance with Messrs. Von Hammer and Frederic Schlegel gave young Richter an opportunity of gratifying his thirst of knowledge. In 1813 he returned to his own country; in 1814 a strong desire of visiting the east led him to the capital of the Ottoman empire, where he studied the Turkish language, besides taking lessons in Persian and Arabic from a Mollah.

In 1815 Richter embarked for Egypt with Mr. Lidman, secretary to the Swedish legation, and penetrated as far as Ibrim, in Nubia. Returning to Alexandria on the 20th of August, they went by sea to Jaffa, on the coast of Palestine: a short time after, Mr. Lidman was recalled to Constantinople, and Richter continued his travels alone; and after having traversed Asia Minor, he returned to Constantinople. He then made excursions into the Troad and to Smyrna. While he was absent from his country, the zealous friendship of Mr. Evers, professor in the university of Dorpat, endeavoured to procure for Richter, who had been his pupil, an opportunity of visiting Persia, and even of penetrating

farther into the continent of Asia, in the suite of a Russian embassy about to set out for Teheran. The request made by Mr. Evers to Count Romanzoff, chancellor of the Russian empire, was favourably received, as might naturally be expected, since it was intended to promote the progress of the sciences. The emperor, on the representation of Count Romanzoff, nominated Richter assessor, assigned him a considerable salary, and ordered him to be furnished with every means to facilitate his studies. Unfortunately the marks of this generous kindness were given in vain. The dispatches of the minister, which contained distinctions so flattering to young Richter, found him at Smyrna, struggling with death. He was still able to express his gratitude to his august benefactor, and manifested an intention of setting out for Teheran as soon as his health should permit. Providence had ordained otherwise; he expired on the 30th of August, 1816.

The manuscripts, oriental books, and other objects of curiosity, which Richter left behind, were sent to Dorpat, where they were added to the collections of the university. Professor Evers collected out of the MSS. of his pupil, and from his letters to his family, every thing relating to Syria, the isle of Cyprus, and Asia

Minor, and from these materials formed an octavo volume. "The truth of the narrative," says the professor, "has no where been sacrificed to style; I have not thought proper to complete the work of my pupil by drawing from other sources; this work would without doubt have been finished, and of more importance, if the author had been able to put the last hand to the sketches which he had made to aid his memory. Such as they are, they seem to me to merit publication."

Mr. Lidman, now professor at Linkioping, is going to publish an account of their travels in Egypt and Nubia.

Richter and Lidman embarked on the 11th of August, at Bulak, to sail down the Nile, and arrived at Damietta on the 13th. Mr. Basil Fakhr, agent for Sweden and Prussia, who received them into his house, dissuaded them from making an excursion to San and the lake of Menzalah; an insurrection which had just broken out in Cairo, had thrown the whole country into confusion, and it was no longer possible to keep the Bedouins of Lower Egypt in order. The travellers, therefore, took their passage in a vessel bound for Jaffa. On the 22nd of August, they perceived the coasts of Palestine covered with olive trees, and in the distance the moun-

tains of Judea, and entered the harbour at noon. The sight of Jaffa afforded but little pleasure to our travellers; they hastened to quit this place, where they were shown the breach by which the French carried it by storm. They arrived at Jerusalem on the 24th, and hastened to visit the holy places.

"On the 12th of October, 1807," says Richter, "the greater part of the church of the holy sepulchre was burnt; the Latins laid the fault upon the Greeks. The chapel of the holy sepulchre, which rested on pillars of porphyry and marble, and the columns which supported the cupola, became a prey to the flames. The melted lead increased the violence of the fire which consumed the wood, which was very dry. It is, therefore, not surprising that the preservation of the holy sepulchre and the wooden doors which close it, though the cupola, all in flames, fell upon it and destroyed the chapel, was considered as a miracle. The preservation of the chapel, which marks the spot whence the Virgin beheld the crucifixion, is more natural, it being at some distance. The Greeks have rebuilt the church after the design of Komeano Kalfa, an architect of Constantinople: the work is without taste; the cupola is low, and of a mean form. The columns have been replaced by heavy and mas-

sive pillars. The whole is embellished with ornaments in the Turkish style, but painted worse than the most wretched country house about Constantinople. On seeing this miserable work, one is tempted to pull it all down."

After giving a detailed description of all the remarkable objects in the church, Richter says: "The sword of Godfrey of Bouillon is enclosed in an old chest in the vestry, where it is left to be eaten by the rust. The tombs of Godfrey and Baldwin, those two genuine Christian heroes, have been purposely destroyed by the Greeks, to record to future ages what hateful and implacable passions divide the Christians of different communions, in a place where they ought to be closely united. The abode of peace, the tomb of him who has taught us to believe in a good and merciful God, resembles a prison, where savage beasts, confined in different cages, steal out, and pass before each other with ferocious looks, and with rage in their hearts, at not being able to devour their rivals. The first words that we heard were, Ecce nostri amici: which a Latin monk said in a tone of derision to a Greek caloyer, pointing to us. The Greeks curse the pride of the Latins, and both load with imprecations the nocturnal prayers of the Armenians. They never speak of each other

but in terms of abuse. What would they all have said, if somebody had whispered in their ear that my companion and I were Lutherans?"

Before they quitted the holy city, our travellers gave to the monk with whom they had lodged, the gift which they receive from the rich, and which serves to relieve the poor pilgrims. Gregory, an Armenian servant of Richter, left the convent a valuable present, viz. a quantity of potatoes, which he had brought from Lower Egypt, that they might be cultivated in the garden of the monastery, an experiment which had not yet been made.

On the 28th of August, at five o'clock in the evening, the travellers left Jerusalem on horseback, by the gate of the Maugrebins, traversed the fertile country on which the crusaders pitched their camp, and which is now covered with olive trees. "We soon found an ancient causeway which led us over stony hills. When viewed from their summit, Jerusalem looked as if built in the midst of gardens; at each step we made we got farther on high mountains. To our right, a large valley separated us from a range of verdant heights: on the most elevated point is the minaret of a mosque; the external appearance of this edifice indicates that it was formerly

a Christian church. It belongs to the village of Nebi Samahouli, on the site of the ancient Rama, (Arimathea). It is said that Samuel is buried here. On a rocky hill, of a round form, is Schorefat, a small ill-built village.

"We passed before caverns cut in the rock, probably for the keepers of the gardens, fields, and flocks; we saw abandoned ruined cisterns' marks of the high degree of cultivation in ancient times. On both sides the road were ruins, the names of which I was not able to learn."

All the country, as far as Naplous, presents an alternation of rough, stony, and naked mountains, vallies planted with olive and fig trees; they frequently met with the ruins of walls and ramparts, and innumerable grottos hewn in the declivity of the mountain. The villages are all picturesquely situated on the summits of the hills, or on their steep sides. Richter had a great inclination to visit the objects which appeared to him most worthy of observation; but his fearful guides would not permit him to satisfy his curiosity; they represented to him, that the villages were inhabited only by banditti and rebels; the travellers had no Janissary with them. "We were unable, therefore," says Richter, "to persuade these cowards, that the abuse

the stones with which some children of the
bs had received us, did not necessarily prove
: we should be murdered or plundered.

At the entrance of the narrow valley where
olous is situated, there are several wells, one
which is supposed to be Jacob's well. There
still about fifteen Samaritan families in this
. We had no reason to praise the inhabi-
ts, nobody would afford us a lodging; they
le faces at us, and called us names; in vain
looked for a room in a khan to pass the night.
length we sat down in a court-yard; Gregory
dispatched to the Aga, with the letters of
ommendation which had been given us for
at Jerusalem. An order soon after arrived
Christian armourer, to give up his apartment
s for the night. We had scarcely taken pos-
ion of it, when a crowd of curious persons
ered, sat down without being invited, and
ed at us, smoking their pipes. It was not
to get rid of these intruders, who were
aritans. They are fond of keeping com-
y with Franks, since somebody has persuaded
n that there are Samaritans also in Europe.
re was nothing remarkable in their exterior
earance.

Naplous, which bears a striking resemblance
Heidelberg, leans on Mount Garizim, the

southern side of which is covered with gardens, raised above one another like terraces; in some places the declivity is actually perpendicular. The environs of the city, in the valley, also abound in gardens and wells, and resemble a thick forest of fruit trees; on the opposite side rises the naked, steep, and rounded Mount Ebal. I saw at its feet, and also on both sides, a great number of grottos, some of which seemed to be excavated with much care; they serve as sepulchres for the people of Naplous; this was perhaps, too, their primitive destination.

"On the following morning we left the city as soon as the gates were opened. Djeret was behind us, on the mountains in the distance. Having ascended Mount Ebal, and left Assira to the left, we arrived at Sennour, a fortified village, and situated on an insulated and rounded mountain; it is remarkable that Djezzar Pacha was never able to take it. The children, who were in the gardens, threw stones at us. Belaïn lies in a fertile valley; a short league beyond it you come to Djeran; there we entered the verdant plain of Esdrelon, which is surrounded with mountains, among which the Djebel Tour (Tabor) and the Daaï (Hermon) are the most distinguished. This beautiful plain is badly cultivated; *there are* the remains of several abandoned vil-

lages. We traversed it in its whole extent, and then again ascended mountains covered with little woods. At night-fall we passed an excellent well, and arrived very late at Nasra (Nazareth), which is built in a rocky tunnel.

"The Franciscan convent at Nazareth is certainly the most beautiful in Palestine, and contrasts singularly with this miserable village. A gate, adorned with two round granite columns, leads to the first court, and a large vaulted gateway opens into the inner cloister, where we saw the remains of three cisterns.

"Very early on the following morning, the 31st of August, we mounted our mules, and, accompanied by several servants of the convent, went to visit the places where our Saviour passed his infancy. The first thing we saw at Nazareth was the well of the Virgin Mary; then proceeding to the north-east, and passing the village of Ranona, came to Cana. There is no vestige of the town of that name; they show, before the village, the well, the water of which our Saviour changed into wine; and the house of Bartholomew, where the marriage was celebrated which gave occasion to this first miracle of Christ. We afterwards went into the field where the three ears of corn were gathered.

"The memory of an event of our own time is

mingled with that of past ages. Near the v
of Loubia, we visited the place where Kleb
1799, defended himself at the head of
Frenchmen, against 4,000 Turks, who at l
took flight, when Buonaparte, coming fro
Jean d'Acre to his assistance, fired a gun.
the left of the road rises a long flat ridg
companied to the east and west by steep
which are called the Horns of Houtin. Tl
lage of the same name lies to the west, at th
of the mountain, called by the Christian
Mount of Beatitudes, because it was her
our Saviour pronounced his sermon on the m
Soon some mountains came in sight, to
dried straw and thistles gave a yellow a
ance. It is usual to burn these plants to
manure, which produces here and there
patches. From the summit of the mountai
saw the walls of Tabarièh (Tiberias), its
called also the Sea of Galilee, and the
mountains of Hauran; and in the distance,
left, the castle of Bethulia.

"Tiberias, which, after the destruction of
salem, was the principal residence of the
of the Jewish religion, and the seat of thei
rature, (for the authors of the Mischna were
bers of its great synagogue), resembles a c
nothing but its walls; the inside has mu

appearance of a village, and is inhabited by Arabs and Jews. The Franciscan monastery is not at all remarkable. About 40 paces from the lake, near the foot of a black basalt rock, there is a warm spring, the waters of which are bitter, and have a sulphureous smell. The bason into which it runs, is of the rock just mentioned, and which, perhaps, contains some sulphureous particles: it is said to be the work of the famous Djezzar Pacha, and is now partly destroyed.

"There is not a single boat to be seen on the lake, which abounds in fish. The fishermen go up to their middle in the water, throw in a small hand net, and draw it out full of fish. We made the trial, and not only caught enough for our own supper, but were also enabled to make a present to the good fathers. On returning, we examined the ruins of an ancient city, and the remains of a rampart, or wall, along the lake; the whole was basalt: these works are, perhaps, as old as the time of Justinian, who rebuilt Tiberias.

"We wished to go as far as the sources of the Jordan, but were obliged to renounce this project, because our guides assured us that the banks of this river were infested by Bedouins, and that even the soldiers of the Pacha would not venture to accompany us. We learnt, too late, that this

report was false; the Nazareens were at war with the Arabs, and nobody ventured to go there, except during the time of the pilgrimage.

"The great fortified Khan, situated about five leagues from Tiberias, at the foot of Tabor, was pointed out to us by the name of Soukel Khan; it had been spoken of before by that of Aïn el Tudschar. On the 1st of September we found a numerous caravan of camels and asses encamped there, going to Damascus. The declivity of Tabor is not always rough; it is only in some places that the road is bad. After travelling for an hour through oak forests, we arrived at the summit, from which there is a most magnificent prospect; on the south you see the vast plain of Esdrelon; to the east the high mountains which border the river Jordan, and the lake of Tiberias; to the north Anti Lebanon; to the west Carmel and the Mediterranean. This summit is a plateau, where there was formerly a large village, with churches and convents, and which seems to have been surrounded by walls and ditches. There still exist the walls and vaults of several churches, and of cisterns; these are partly excavated in the rock, and partly built above ground; the water in them is excellent. On the day of the transfiguration of our Lord,

which took place on this mountain, mass is said in a subterraneous chapel."

Richter observes, that the church of the Franciscans contains the best pictures in Palestine; in the vestry there are, among others, an Annunciation and a Mater Dolorosa, of very great value. "You see with pleasure, (says he,) that the inmates of the convent are contented with their lot. The Turks oppress them much less than every where else. We expressed our sincere wishes for the long continuance of this precarious existence, and bade the fathers adieu at 2 o'clock in the morning of the 2nd of September.

"Mounted on bad horses, we proceeded towards the west, over the rocky road which leads to the fertile plains of Zabulon, where the scattered fires in the Arab camps shone in the obscurity of the night. We saw, in our route, only two wretched villages before we arrived at the chain of wooded hills which separates this canton from the gulph of St. Jean d'Acre: having climbed up these heights, we perceived a well cultivated plain, bordered by the sea and by Mount Carmel, the sides of which are covered with wood; we went along the foot of it, and some paces farther crossed the Moukattoua (Kischon), a stream, the waters of which are limpid and green, and

wash the base of the mountain; and at its mouth, divided into several branches, water many pretty gardens, filled with fig and pomegranate trees, the fruit of which was already ripe. Soon after we reached the village of Khaïfa (Hepha), so remarkable in antiquity for its fishery of the muscle, which furnished the purple, that it obtained from this circumstance the name of Porphyreum. The road affords very good anchorage for ships bound for Saint Jean d'Acre, for which reason they are used to frequent it. The ruins of a castle and of two churches, prove that this advantage cannot restore to this place its past prosperity.

"We took up our abode with the only Carmelite who still lives at this place; he went with us on horseback, by a very rough road, to the ruins of the convent of the prophet Elijah, on Carmel. The French transformed this great building into an hospital for persons afflicted with the plague, which made the Turks determine to destroy it. Good cisterns and a half desolated garden, which contains the grotto of the prophet, are a part of it. A portion of the church is still dedicated to divine service.

"The ancient convent of the Carmelites is on the summit of the promontory; it consists of a chapel, with cells for the monks, and wells, all

hewn in the rock, which is here a flint imbedded in soft chalk. The grottos on Carmel are very numerous, particularly on the western side; it is said that there are above a thousand, and that they were formerly inhabited by monks; it is not believed, however, that they excavated them. In a place called the Monks' Cavern, there are 400, one below the other. The windows and chambers are cut in the rock; lower down, in a hard limestone rock, there is one remarkable for its size; it is 20 feet long, and 15 broad and high, and is very sonorous. It is said that Elijah inhabited it; it is at present a musselman sanctuary, and called Khider Elias (Elijah the green), or abbreviated into El Khider (the green). I do not know how the prophet acquired this surname; but he merits it, if we may apply it to the abode he made on this mountain, for Carmel may be characterised by the appellation of the Green. Its summit is covered with pines and oaks; lower down, its sides are shaded with the olive and laurel: springs, which form brooks, issue from every side; the most considerable flows from the well of Elijah, towards the banks of the Kishon, which are bordered by tufted groves. There is a most delightful view, from the summit of Carmel, of the gulf of Acre, with its fertile shores, and the heights of Lebanon, which appear blue.

"The old dervise who regaled us with coffee in his kiosk, near the cavern of Elijah, spoke to us much of this prophet, and assured us that he had seen him; he described him to us as a handsome old man, dressed in the white robe of a sheïk. After dinner, we continued our route along the sea shore. A succession of sandy downs separated us from the fertile plain. We were obliged to cross the Moukattoua, then the Noman (Belus), which is much more considerable. According to the testimony of history, it was with the sand of this river that the first glass was made.

"Saint Jean d'Acre, the ancient Ptolemais, situated to the north of the bay of the same name, and surrounded with a wall four fathoms in height, bears within and without numerous traces of devastation. This city is indebted for its most remarkable edifices to Djezzar Pacha, of terrible memory, as well as its fortifications, which have been of no use, and never will be; for, according to the custom of the Turks, they were not erected till the enemy was gone, and since then, they have not been kept up: so that the part which projects into the sea has already fallen down. Djezzar has been more fortunate with several spacious Khans which he rebuilt. In one of those buildings, the gallery which encloses the

court is supported on 23 granite columns, taken from the ruins of Cæsarea (Kaisaria). I was much pleased with a bath, the lower part of the walls of which is covered with a kind of Dutch tile, and the bottom ornamented with marble of various colours. The mosque of Djezzar lies in a pretty garden, embellished with palms, fruit trees, and flowers. The domes of the court-yard rest on columns of granite, and red and white marble, taken from Cæsarea. The dome of the mosque is light, elegant, and covered with inscriptions. Near this edifice is the tomb of Djezzar, of white marble, with gold, surmounted with a roof; it is surrounded with a balustrade, and shaded by magnificent cypresses. Near the city, there is a grand aqueduct, in ruins; Djezzar had it built, but his successor, Soleiman Pacha, abandoned it, and has almost finished a new one.

"It is thought that Saint Jean d'Acre contains 15,000 inhabitants, among whom there are many Armenians and Greeks. Notwithstanding the bad quality of the water, and the unwholesomeness of the climate, the population increases; for the Europeans, not deterred by the shallowness of the port, come here to take in cargóes of wheat, silk, and cotton, the produce of the adjacent countries. The people have an appearance of opulence; they wear a striped robe,

descending to the knee, the upper part of which is adorned with embroidery of divers colours, executed after a common pattern; they are bought ready made: an ample, broad-striped mantle is worn over them. The head is covered with a red cap, hanging down at the sides, and a couple of pieces of figured stuff, fastened round the forehead. The Arabs wear white robes, with a dagger in the girdle. The costume of the women is that which they wear all over the east; they appeared to me more strictly veiled than at Nazareth and other places on the road. Many of them are pretty, but, by attempting to adorn themselves, they spoil their beauty; for instance, by strings of large silver coins, with which they ornament their forehead and cheeks: those who are rich, substitute gold medals; they also wear them round the neck, and, in general, are overloaded with gold trinkets.

"Mr. Lidman, not having found a vessel at St. Jean d'Acre ready for Constantinople, was obliged to accompany me to Saide (Sidon.) We set out on the 4th of September, and in three hours reached Semérich and Djib (Akhzib, Ecdippa), celebrated for their water-melons; the latter village lies on a hill, washed by the sea. White Cape (Promontorium Album), three miles from Acre, justifies its name, which it owes to

the white limestone rock of which its steep sides are composed. An edifice has been erected on its summit to collect the toll, and is called, in consequence, Kefar. We remained here several hours, and then continued our journey, during the night, along a hill, gently sloping towards the sea, and entirely uncultivated. We passed by a second Kefar, and saw the Ain-es-Sakar (the sugar wells), which Soleiman Pacha had recently made.

"At sunrise, we arrived at Ras-Al-Ain (Palæ-tyrus): great stone reservoirs, of Turkish construction, placed on ancient foundations, collect a considerable mass of water, which works several mills, and traverses the plain by an ancient aqueduct, which, being surrounded with verdure, has a very picturesque appearance; it is from this aqueduct that the place derives its name, which signifies, Head of the Springs.

"We soon after perceived a sandy shore, and the peninsula on which are the ruins of Tyre. Nothing is to be seen of the antient city, except the dyke of the bason of Alexander, and the two arcades of an aqueduct, which are far behind the sandy hill formed of the ruins of the third Tyre. The celebrated Emir Fakhreddin built, in a corner of the peninsula, a fortified house, which, guarded by some Janissaries, cannot serve as a fort. Sour,

the actual city, which merits more the name of a village, covers scarcely two thirds of the ancient isle. The peninsula and the shore are deep sand. To the north there is a double port; the interior was defended by walls and towers; remains of them are still to be seen, which are probably of the middle ages: there is not much water. The rest of the island consists of fields and gardens, planted with fig and nopal trees, and is surrounded with a brick wall, without cannon. The whole of the ancient isle has a similar enclosure, and some towers on the land side.

"We were able to see, from this point, a part of the road we had travelled the night before. Before Ras-Al-Ain, along the sea side, begins an ancient causeway, hewn in the rock, and partly paved, which is attributed to Alexander the Great; the sea broke with much violence against its shores, and its roar overpowered the sound of the cannon with which the fête of the Beiram was announced at Saint Jean d'Acre.

"Leaving Sour in the afternoon, we passed by the ruins of a khan; it is near a bridge over the Kasemikh, or Leitane, which issues from a wild valley, and makes numerous windings in flowery meadows. The country is entirely uncultivated; we saw only one field of cotton, where the plants were almost choked with weeds: two gazelles

crossed the road. All at once we perceived a small port, and round the banks cisterns, some open and some closed; fragments of columns and altars, and in the sea foundations of a building of a square form, having steps leading into a hollow. Are these ruins perhaps those of Sarepta? We fell asleep by the tomb of Sheik Khider, now inhabited by Sheik Mousa; our repose was interrupted by the fleas and the Arnauts: the latter made so much noise, that we were forced to break up. After a march of several hours we halted on the banks of a river, over which Soleiman Pacha had thrown a bridge. We observed in this canton several small streams, partly dried up, and many springs and wells.

"On the 6th of September, at sun-rise, we discovered Saide (Sidon). A single tower on an eminence rises in the midst of gardens, which, like a beautiful garland, surround this city; it has a very pleasing effect. The houses are large and well built; a garden is attached to each, where there are tufts of banians, and flowers of various kinds exhale the sweetest odours. Out of the gate we saw a Turkish cemetery, planted with beautiful trees; where the women were saying their prayers. The interior of Saide did not answer the expectations we had formed of

it; the streets are narrow, and for the most part ill-built.

"There are no remains of the ancient city of Sidon; the modern city is declining, and the commerce going to Bairout. The port, on which the ruins of a mole are to be seen, is entirely sanded up. This city has a population of 8,000 inhabitants, the greater part of whom are Greeks. Its environs, as far as the banks of the Auleh, are adorned with numerous pretty gardens; the mountains behind Saide give an additional charm to the landscape; but beyond the Auleh there are naked and stony mountains, traversed by an ancient causeway, the bad condition of which renders it very disagreeable. At a short distance from its extremity, there is the khan of Nebi Jounous (the prophet Jonas), with several buildings belonging to it; gardens, and good springs, in a fertile spot, shaded by beautiful trees.

"The road afterwards leads along the sea coast in deep sand, and sometimes at a distance from the shore over stony ground; but the view of the mountains, covered with villages, convents and gardens, is some indemnity for this rough road. The route was formerly by a bridge over the Damer (Tamyras), which issues from a narrow valley confined between the mountains; its

waters are cool and clear; the beautiful gardens announce the fertility of its banks, which are bordered with superb rose-laurel.

"Bairout (Berytus), which we entered on the 7th of September, is situated on a verdant peninsula; to the north there is a bay, at the mouth of the Nahr Bairout (Magoras), a pretty broad and deep river. Nothing can be seen of the city till you come to the gate, because the road constantly lies in a hollow way between gardens. A limestone mountain, strewed with country houses, vine and mulberry trees, conceals Bairout so much, that it cannot be perceived till you have climbed up pretty high. Between the gardens there are little groves of pine trees. Near the gate there is an esplanade with fountains and trees. Though Bairout does not contain quite 12,000 inhabitants, it is said to be at present the most commercial port in Syria. The chief articles of exportation are silk and cotton, and they are principally consigned to France and Italy. Greeks, Druses, and Maronites, rival each other in activity; every thing in the environs of the city, even to the slopes of the mountains, announces the industry of its inhabitants.

"We travelled, first, through the hollow ways and sandy roads which I have described above.

Hedges of reeds, briars, and nopals, surround vineyards and plantations of mulberries; at most of the crossways, in the vicinity of the villages and country seats, there are coffee-houses, and shops, built of stone and boughs, where fruit is sold. The khans consist of a stable and a couple of chambers. The number of springs, wells, and streams, is inconceivable, the water of which is excellent. The vineyards and mulberry plantations are the chief objects of cultivation.

"In proportion as we ascend the heights, the prospect extends; and after passing the first terraces of Lebanon, the view embraces the fertile district on the coast. The farther you go, the worse the road becomes, and at length you lose every trace of it. The poor beasts of burthen have to pass over heaps of stones, or climb, and then descend steps very roughly hewn in the rock; to turn with much difficulty between very high stones, or to hold themselves fast on the smooth rock. Our asses were very surefooted; we were, however, obliged to walk several times. It is inconceivable how caravans, camels, and mules, heavily loaded, can proceed on such roads; the strength and perseverance of these animals are admirable. It is very disagreeable, and even dangerous, to meet them, or even to be

obliged to precede them. The path is sometimes very narrow; the mules and their drivers go straight forward, and violently overthrow whatever is in their way. I have several times seen asses thrown down in this manner.

"As we advanced, we perceived that the ramifications of the mountains which branch out from the principal chain, run parallel to each other from east to west, extending towards the sea. Their flattened ridge rises far beyond the shores; and at this elevation they are covered with rows of villages, country seats, convents, and vineyards, where the branches, as in all Asia, lie upon the ground. The vallies over which our prospect extended were deep and narrow. Above the fertile mountains rise the steep sides of the principal mountain, tinged at this moment by the yellow reddish hues of autumn. Troops of black goats, with brown pendent ears, and broad-tailed sheep, pasture on these mountains. The top of Lebanon forms the last summit; it is a naked, rocky, steep ridge, of a grey violet; its ravines are filled with fields of snow; limestone is the predominating rock. We were enveloped in thick clouds; a sun-beam penetrating them, illumined a village on a mountain, while every thing else was entirely concealed from us.

"We reposed in some khans, where we
nothing but milk, cheese, eggs, fruit and
all these were excellent, but the bread wa
bad. When we had nearly reached the h
point of the rock, we came to the khan wh
were to pass the night.

"Between us and the indented and
ridge of Anti Lebanon, we saw, the next
ing, a white undulating surface, which rese
a great field of snow; when the sun rose
by degrees put in motion. They were
which extended from one chain of mount
another, entirely concealing from our vie
whole plain of El-Bkaa, formerly belongi
Cœlo Syria, which, the evening before, w
seen from a distance. While we were
fasting in the cabin of a good old Druse,
clouds dispersed along the sides of the
tains, and at length vanished into the sea.
then descended into a high and broad
entirely enclosed between mountains. It
consists of flattened hills; they are separa
ravines which cannot be distinguished fro
summit of the hills, constantly presenting
eye a plain, and continually deceiving i
respect to distance, especially as the undu
nature of the ground prevents objects
being seen very far off. Before we be

direct our course to the bottom of the valley, we were shown Balbec at a distance, which made us hope that we should reach it in a few hours. The city soon disappeared, and we travelled the whole day without seeing it, till an hour before we entered it.

"On our first entrance into the plain, at the opening of the valley, where we had passed the night, we left behind us the ruins of the castle of Kabb Elias. In the plain we saw several miserable villages, built of bricks dried in the sun: such are Albeya and Moallaka, with a mosque half in ruins, which is the residence of a Sheik. Nothing can be more wretched than the houses; but how delightful are the thick groves of willows, Italian and silver poplars, which shade the innumerable streams that serve to turn mills and to water the gardens. We then quitted the slope of Lebanon, on which we had hitherto travelled, and proceeded towards Anti Lebanon, passing, by means of a bridge and a heap of rubbish, a stream, which is the lowest part of the valley. To this point it is cultivated, but from thence to Balbec it is desert, and gradually widens towards the north. To whatever side you look you cannot see a tree, a plant, or the traces of a human being. Troops of gazelles sport on the very edge of the road. At

length a file of buildings appears on a chain of flat hills; this is Balbec: about a league before you reach it, there is a *turbek*, or oratory, in ruins; it consists of eight columns of the most beautiful granite, broken, placed without order, and partly turned upside down.

"Balbec is situated on the slope of Anti Lebanon, at the issue of a small valley in the plain of El-Bkaa. The new town consists of an irregular assemblage of wretched houses, built of red stone; they stand round two mosques, of Saracen architecture, partly in ruins; the decayed walls, in which there are many remains of antiquity, are of the same kind of construction. The valley is traversed by a small stream, which has been divided into numerous arms to water the fields. In the deepest part of the valley it bathes the walls of the castle, in the vicinity of the ancient ruins, which rise majestically amidst the sombre foliage of the trees. Between the intervals of the columns you see the fields of snow on the highest summits of Lebanon, which is before you.

"Balbec, inhabited by some hundreds of Maronites, Turks, Greeks, and Jews, belongs to Tschahtschah, Emir of the Motoualis, who prematurely took it into his head that he was a powerful prince: Soleiman Pacha has very much

humbled him. I would willingly have presented to him the Pacha's letter, but he was absent; and I was able to see, only for a moment, some of the persons who honour him as their legitimate sovereign, and who seem to be distinguished from the other Christian inhabitants of the town, in being better armed.

"Besides the striped robes which I mentioned in the account of Saint Jean d'Acre, they wear here much blue: they add a red cap, hanging down at one side, with a great quantity of silk twisted round it; it is striped red and white, or yellow, and is a very pretty and picturesque head-dress. On the following morning, accompanied by two old Christians and a troop of noisy boys, we went to visit the ruins of the city of the Sun, which lean on an eastern branch of Libanus, and which, by way of distinction, are called the castle.

"I approached it, expecting to be struck with the elevated character of the objects I was going to behold; the gigantic monuments of Egypt had accustomed me to this sensation: I was deceived. It is one of the peculiarities of the Corinthian order, which is the only one found here, to appear little at a distance, and not to produce an impression till we can observe, close by, the grandeur of the masses, and the beauty

of the execution, and compare the one with the other. Accordingly, as soon as I was able to measure with my eye the dimensions of the columns, and to see the incomparable delicacy of the work, I fell into an ecstacy, which deprived me of utterance.

"The temple, which some call the temple of Jupiter, built by Antoninus Pius, and which others erroneously take for the tomb of Heliogabalus, forms a parallelogram. Its length is 138 feet, its breadth 96; it has a vestibule, and is surrounded with columns. Some are still standing upright, others lean obliquely against the walls of the temple; some are decayed, others entirely thrown down. They are separated from each other, as also from the walls of the temple, by a distance of nine feet. The ornaments are of extremely rich workmanship; a part of the covering which united the peristyle to the principal edifice, still exists. We had much difficulty in distinguishing the attributes of some divinities; all the faces are mutilated. Nothing can be more magnificent than the portal."

After describing in detail the rest of the temple, Richter and his companion visited the other monuments which render Balbec famous, and of which several other travellers have already spoken. They continue to fall more and more

into decay, which is always the case in countries under the Ottoman dominion. Richter, like all preceding travellers, expresses his astonishment at the prodigious dimensions of the stones of these edifices; there are several 60 feet in length. Volney mentions three which occupied a space of 175 feet and a half. The inhabitants of Balbec, who are never at a loss to explain things which surprise them, say that these buildings were erected by genii, by the command of king Solomon. On the mountain near Balbec there are also a great quantity of ruins, cisterns cut in the rock, caverns, and Turkish tombs.

The travellers went to the quarries which furnished the enormous masses employed in the edifices of the city: there are still in them stones detached and squared; one of which seemed to Richter longer and thicker than those he had observed in the buildings in the city. In fact, Volney says, that "it is sixty-nine feet two inches long, twelve feet ten inches broad, and thirteen feet three inches thick. It is called *hadjar el hableh* (stone of the pregnant woman), because they pretend that a female saint, in a state of pregnancy, lifted it."

"In the afternoon," continues Richter, "we rode on horseback in the beautiful valley, at the

extremity of which Balbec is situated, and where the stream which runs towards the ruins has its source: it issues from two semicircular basons; below it acquires a breadth of fifteen paces, and forms little islets covered with pasturages; lower down it waters pretty gardens: near the source there is a mosque in ruins."

"Whoever wishes to form a clear idea of the actual state of the country, compared to what it was at the period when these edifices were constructed, may, as we did, on returning towards Lebanon, have what is called the palace of the Emir opened; it consists of a suit of low rooms, whitewashed without, and surrounded by a court-yard, the only ornaments of which are a tree and a bason full of water. Before sun-rise we continued our route along the same road we had taken in going to Balbec. We had passed the night with a very obliging Druse; every thing I have hitherto seen of these people pleases me. The men are distinguished from the other inhabitants of these countries by a white girdle, and, in general, they wear a great deal of white. The head-dress of the women is very unbecoming; it is a conical cap, which is very stiff, and resembles the modius of Serapis. A Druse brought us one belonging to his wife, a full span in height; it was covered with silver brocade: it

is fastened with a lace on the right side, or in the middle of the forehead, and inclines forwards, like the horn of an unicorn. The rich people decorate this ugly ornament with pearls; but, in general, we see nothing of it, because they throw a veil over it, which gives their head a very strange appearance; one would say, that it is furnished with a proboscis. This fashion is also observed at Bairout, where we arrived on the following day.

"Mr. Lidman met with a Hydriote vessel ready to sail for Constantinople; he availed himself of it, and left me on the 14th of September. Being now alone, I resolved to visit Mount Lebanon; the beauty of the autumn invited me to take this excursion. I quitted Bairout on the 15th, and went along the sea shore, in the midst of charming gardens, which extend as far as the convent of Saint George; in which the monstrous dragon is imprisoned which that Saint vanquished at the moment it was going to devour a beautiful princess. You may proceed afterwards along the rocky beach, without being obliged to pass the ancient road, which is extremely inconvenient, hollowed in the rock, and paved; I met with several ruins belonging to different eras. On the highest point of the road, towards the north, is a pedestal hewn in the rock, which is said to have

borne the statue of a wolf, which gave its name, Lycos, to the neighbouring river; at present it is called Nahr Kelb, (dog's river). According to tradition, they still show, upon this pedestal, a place to which a dog was fastened, which, breaking loose, was precipitated to the bottom, and changed into stone. In the sea they showed me a stone, which, when the tide fell, resembled the hinder part of an animal sitting; I believe that it was an ancient miliary stone.

"The Nahr Kelb, viewed from the point where the pedestal stands, is extremely picturesque. It issues from a narrow ravine formed of naked grey rocks, and flows under a slight bridge. On the right bank there is an aqueduct, partly supported on arches; the richest vegetation adorns the aqueduct, as well as the banks and the mouth of the river. The water of the aqueduct falls on the wheel of a mill, which is near a khan, and concealed by the foliage of the trees. A Latin inscription, carved upon the rocks near the bridge, informs us that the Emperor Antoninus Pius caused this road to be made.

"I quitted the bank, and advanced between plantations of mulberries: to the east I had the masses of freestone, in which canals have been formed to water the gardens. When I reached the heart of the rocks, far from finding it desert,

each step I took conducted me to a more fertile country. The mountains, cut into terraces, were cultivated to the very summits, and covered with villages and country seats, but especially convents. Cultivation was not interrupted, except in those places where the rock was perpendicular. Woods grew on some parts.

"I arrived early at Souk, a village which is the chief place of the Kesrouan (Libanus exterior), and where Sheik Bschareh, belonging to one of the three noble Maronite families, commands in the name of the Emir of the Druses. This chief and the bishop gave me a very good reception. The latter showed me the church, and wrote me down an itinerary for my tour in the mountains. The house of the Sheik is newly built, and large; it would be esteemed, even in Europe, a pretty country house. Souk, as well as the other villages, is situated on the slope of the mountain. The Christians here, and in the whole canton, are allowed the use of bells. The Emir of the Druses being a Maronite, they enjoy great liberty.

"The following day, I continued my route in the midst of villages, convents, and gardens, alternating with forests. The road, however, grew very bad, particularly when I descended into the wild valley, where the Nahr el Salib (the

river of honey) runs half concealed amid the rocks. When I arrived at the foot, I could scarcely believe my eyes, seeing the rocks upon which I had ventured; it is true, I was on foot. In the best places the road was not two feet broad; it was covered with flints ready to roll down, or where the layers were vertical its surface was broken with rugged clefts.

"I stopped for the second time in the village of Deir Schoumrah. There were only women in the house which I entered; some of them, besides the horn which I have described above, had, on the side of their head, something resembling that singular ornament, and which terminated in a large thin metal plate. At length I discovered, at a distance, the highest summit of Libanus, and on its slope the convent of Saint John, or Mar Jouhanna Schvoier, contracted into Mar Hanna. It belongs to the Melchites, who are 33 in number, and, independently of the duties of their station, employ themselves in printing books in their own language; they are only ascetic works. The paper is the only article they procure from Europe; the rest is manufactured here. They received me very well. The interior of the convent is dirty; the two churches are ornamented in a bad taste. On

the opposite side of the valley there is a silk yarn manufactory.

" The desire I had of seeing the ruins of Kalaat Fakra, made me brave the inconvenience of a road as bad as the one by which I had come to Mar Hanna. It leads to the convent of Saint Simon, over stony, but fertile mountains. I descended on foot into the valley of the Nahr Djimedjeb, over which there is a bridge; its bed was dry. The mountains, though steep, are green to the very summit; having climbed up to it, I saw, above the vault from which the Ain Ahab, a limpid stream, issues, a Greek inscription, which I could not entirely decipher. Several pretty women were washing broad-tailed sheep. At a small distance there was a silk yarn manufactory. The oaks which cover this summit announce, by their miserable appearance, the poverty of the soil.

" Leaving it for Itfaratka, a village, the agreeable gardens of which pleased me much, I soon arrived at the convent of Saint Simon (Mar Seman), after having passed an aqueduct, which is ill built, and rests upon arcades in ogives. The convent is well built. Except the fine prospect which you enjoy from it, and which extends as far as the sea, and over the peninsula

of Bairout, there is nothing remarkable in this place. I descended on the other side of the mountain into a magnificent valley, which commences at the highest summit of Libanus, and which is entirely surrounded by verdant mountains. On one side, we behold the tops of the mountain whitened with snow, on the other the sea at a distance; the poplars, oaks, acacias, even the rocks, are covered with branches of the vines twined together. The Nahr Bakheita flows from a very ample fountain, shaded by their foliage, and soon becomes so wide, that it cannot be passed but over a bridge composed of beams and branches.

"Having climbed with much labour up the slope of the mountain, I found myself, on a sudden, at the gate of the convent of Deir Seid Enniah, which is well built, and where I passed the night. The following day the roads were not better; but the prospect extended, and after I had passed some hours in ascending and descending the mountain, I perceived the mines of Kalaat Fakra. A corner building appears to have been formerly a church; heaps of stones are piled up along the walls. The interior is divided into two apartments; the doors by which they communicate still remain. One of the rooms is ten paces

square; the largest, in which there are fragments of columns, is ten paces by fourteen.

"The summit of the mountain consists of indented rocks, for the most part in a state of decomposition, and which form ravines, clefts, and the most fantastic caverns. Several of these caves are now used for stables; roads cross each other in all directions in this rocky labyrinth.

"At the lower extremity of the mountain, towards the east, advantage has been taken of the ground to level it into a terrace, on which a temple was built; the stones scattered around are of very large dimensions. I perceived some ornaments of the Corinthian order. In going to the summit other ruins are seen; an enormous stone seems to have been the covering of a Monolithe temple. The third edifice is on the top of the mountain, it is a square tower; the covering, and part of the west and north fronts have fallen. It was two stories high, and had a staircase to the top. The entrance is to the east; it is evident that it has been opened by force: it was doubtless a tomb closed up by stones and double gates. The remains of a Greek inscription over the gate merely announce that this edifice was erected in the reign of Tiberius; another inscription, in the same language, on a stone in the wall, does not give farther information.

"In this region the gardens cease; they are succeeded by fields, which are cultivated by the help of oxen. Climbing still farther up, I arrived at the Nahr el Leban (river of milk): it issues at the foot of the highest summit of Libanus, from a grotto, where it already forms a considerable rivulet; its water is limpid as crystal, and cold as ice. Formerly, after having flowed along the valley, it rushed over immense rocks, into a profound abyss which it had hollowed; then penetrating the stone, it passed under a natural bridge forming a very high arch. On the left rises a summit of the Djebel Fakra, resembling a pyramid clothed with verdure; on the right two summits of Lebanon, each surmounted by three points perfectly similar to each other. The hand of man has taken the stream at its source, forced it to quit the abyss, and to flow, with innumerable sinuosities, along the sides of the mountain, to water them.

"They have partly directed in the same manner the course of the Nahr el Salib, which issues from under the stones that are accumulated at the foot of Lebanon. There remains sufficient water in its bed to form a cascade, shaded by beautiful plane trees, growing in the interstices of rocks, and which falls down into a charming valley. We advanced between the two arms

into which the stream divides, and which take their course in different ravines. Nothing can be more picturesque than the country which they traverse. The names of Rivers of Honey and Milk, given to the two largest streams of these mountains, originate in their waters being the most abundant in the season of milk and honey, namely, in the spring. I passed the night at Haradjeh; the beautiful valley of which, independently of its vine and mulberry trees, is very fruitful in millet, maize, and French beans. With the exception of the oxen employed in agriculture, but few are seen on these heights; even horses are rare: goats and asses, on the contrary, are very common; there are also broad-tailed sheep. With respect to wild beasts, I heard of none except bears, which are said to be pretty numerous, and are much dreaded.

"On the 19th of September, I set out early, to cross the steep mountains on the declivity of which Haradjeh is situated. The gardens soon cease, then the fields; I saw only meadows and miserable oaks. In a small plain I met with a camp, consisting of ten tents, made of felt; they belonged to some Nomade Arabs, who, however, did not make their appearance. Round them, a horse, camels, sheep, and goats were grazing. I believe, that on these heights these latter animals

have a stronger smell than any where else. I perceived at a distance, Bairout, swimming, as it were, in a cloud, and the Djebel Mousa, a mountain of a bright grey, sprinkled with a few trees. I passed before the El Nadir, or Frozen Spring; I then arrived at the deep grotto from which the Nahr Ibrahim (Adonis) issues: it flows under an ill-built arch, falls over three terraces, regularly formed, and which are of ancient construction, and then descends by an innumerable series of cascades into the valley, between two villages, which have pretty well retained their ancient name of Aphaca, being now called Afka. Noble walnut trees shade the course of the Nahr Ibrahim; near the bridge there is a mill; and close to the left bank, above the fall, on a rounded hill, the ruins of Aphaca, celebrated for the worship it paid to the goddess of love. The temple is so entirely ruined, that I could not make out the plan of it. The exterior wall has fallen inwards; the stones, however, are not separated. Some fragments of ornaments reminded me of what I had seen at Fakra. I endeavoured, without success, to penetrate into the grotto; it appeared to me that the interior communicates with several chambers.

"The valley of Akoura, into which I descended after having enjoyed the view of the sea on the

left, and of the high mountains on the right, is very deep, well cultivated, and watered by innumerable streams, which fall from the rough, naked and perpendicular rocks by which it is surrounded. The inhabitants, sitting in the walnut trees, were beating off the fruit with poles. The village of Akoura is large; the villagers have an air of comfort, and most of them are well clothed. I could not obtain hospitality in their houses, but was obliged to pass the night under a walnut tree, after having taken a frugal meal of milk, eggs, and grapes. My presence disturbed these mountaineers; they importuned me by their curiosity, and spoke mysteriously of treasures concealed under heaps of stones before the village church. I showed them that I had no mind to dig them up, for I wrapped myself in my cloak and fell asleep.

"As the villagers had dropped some words of inscriptions in a language of the Franks, which were at Kirnet Drata, I resolved to go thither: after much trouble, I found a man who was acquainted with the road; but he made a great secret of it, alleging the fear which he entertained, on the one hand, of the Emir, and, on the other, of my skill in carrying away the treasures. At length he told me that he would not go there even for a hundred piasters. Our negociations

came to no conclusion. I left these ignorant people, and went along the foot of the rocks to see a little grotto, converted into a miserable church; it is an ancient tomb, for a dozen persons; two smaller grottos are attached to it.

"The roads became steeper and ruder; the mountains, covered with verdure, presented only dwarf pines, and some thorny shrubs; it was a real solitude. I perceived, beyond the grey mountains, the sea, and a great extent of the coast of Syria, from Bairout to Tripoli. Having quitted the road to Balbec at a Turkish tomb, we met with some Motoualis on horseback, and tents of the Arabs of Sarkiat.

"On the 20th of September I arrived at the village of Hadet, situated opposite to the highest summit of Lebanon and the celebrated cedars; I slept under the roof of some peasants, more hospitable than the inhabitants of Akoura. The following day I ascended, on horseback, to the forest of the cedars: on the left, I had the valley of Koudischou; it is so narrow, and the rocks which confine it so steep, and so hanging over, that I could not see the bottom of it. From the edge of these rocks, along which the road passes, every spot is cultivated, up to the point where a rocky wall begins, and which appeared to describe a semicircle. On the hills, and the

branches which run into the valley, there are charming villages, well watered, and situated on the brink of the abyss; one of the prettiest is Hasroun.

"Leaving the cultivated country, I ascended, under the direction of a peasant, by narrow ravines and rocky plains, to the ancient forest of the cedars; there are some hundreds of trees, of which a dozen are old. The bark of most of them is spoiled by the names which travellers have carved in it. Having rested a little, near a good fire, I had some of the fruit beaten down; and followed the road, which was still bad, on the other side of the valley. I passed through Bscharraï, a pretty village, near which the convent of the Carmelites of Marsirkis is concealed by the trees, in the midst of high rocks. At a little distance I saw several other pleasant villages, such as Ban and Hadjit, which enliven this savage district.

"Having descended to the bottom of a steep valley, I scaled the opposite mountain to the convent of Kacheïa, dedicated to Saint Anthony, and belonging to the Maronites. I visited the printing-office; of course nothing is printed there but the Holy Scriptures and books of prayer. Among other things printed here, are the Gospels, and prayers, in Arabic, with Syriac characters. I

found there the Gospels in Syrian and Arabic, and Arabic and Latin, printed in the Propaganda at Rome. The press at Kacheia has not so great a variety of types as that at Marhanna; the monks cut them. There are twenty convents in the district of Libanus: Kacheia has the greatest number of inhabitants; namely, 75, of whom 50 are monks; their chief occupation is agriculture, and the culture of silk. The convent, situated in the midst of rocks, consists partly of caverns. The church is very ugly, and I was surprised at the great number of silver lamps which it possesses.

"The day was far advanced when I quitted the convent; but the sun was not yet to be seen, it merely gilded the tips of some of the mountain summits. I did nothing but ascend and descend as far as Tripoli; the country is less cultivated in the lower vallies than on the tops of the mountains; there is, however, an abundance of almonds, mulberries, olives, and vines. As soon as I had passed the bridge of the Nahr Aba Aly, I found the fertility of the soil seconded by assiduous labour. The peasants were occupied in the fields, in gathering the cotton.

"Tripoli, called Taraboulous by the Arabs, is situated at the foot of Libanus, below a mountain, on which is the fort; and it is so completely covered by it, that you do not perceive it till

you get quite near, and look over the roofs of the houses. I traversed a great part of it across a Turkish burying ground, where women were seated in huts and in tents; I afterwards met with fine gardens of fruit trees, less agreeable, however, than those of Bairout, because they are in the midst of sands and surrounded by very ugly walls. The interior of Tripoli surpassed the expectation I had formed of it. The bazaar is very well built, and well supplied with merchandize; in the centre of it is a very neat khan, which affords accommodation for above fifty merchants. The Nahr Aba Aly is crossed by two bridges; there is every where a life and activity which foreign commerce may contribute to maintain, though the town has no port, and the road, which is full of rocks, affords no security to vessels when the north-west wind is violent.

"I was conducted to the ruins of subterraneous vaults, formerly belonging to a church which adjoined the old castle; at present gardens are planted over those which still exist. Penetrating into them, you arrive, by means of a passage hidden behind the castle, at the beautiful valley of the Nahr Aba Aly, the rich cultivation of which excites admiration: the Melvevghisch, a convent of Dervises, is concealed behind fruit trees. From it issues the spring which runs

underground, traverses the fort, and flows towards the town; pretty kiosks invited me to enjoy the coolness and the beautiful prospect, but I had some difficulty in obtaining admittance: I did not see the Dervises.

"In the afternoon, I rode on a miserable ass to Bedevigheh, which is the name given to the tomb and mosque of a Santon. A limpid source falls here into a bason, and then runs towards the sea. The bason contains a quantity of sacred fish; they are of a dark green and gold, the extremity of the head and sides bluish, the belly white, with red spots; I take them to be a species of carp: they are fed with bread and pease; but nobody dares touch them; it is said that they go down to the sea, and then reascend the stream. I also observed crabs in this bason. I never saw finer plane trees than those which shade this place; among others, in the court-yard of the mosque there is one, which, from one extremity of the branches to the other, measured at least two hundred feet.

"The gardens between the town and the sea are principally planted with olive trees; hedges of reeds surround them, and the entrance is by gates arched and grated. Near the shore, on the extremity of a triangular slip of land, stands the village of the seafaring people, which bears

the common name of La Marina; there are in it many magazines, khans, and coffee-houses; ships cast anchor between the shore and some small rocky islets. From this place, you perceive, along the banks, little hills of sand and heaps of stones, which extend, in various directions, towards the interior; these are, perhaps, remains of ancient Tripoli. I even fancied I could distinguish the indications of a mole; but the rocks have such peculiar forms along this coast, that we are always in doubt whether the parallel banks, and the round and oblong basons, which we see, are the work of nature or art. At the commencement of the promontory, on which Tripoli was situated, there is, on the left of the road, a deep cavern with some windows, and near it vestiges of an ancient road, and of a quarry."

(To be continued.)

THE PLAIN OF TROY,

BY PHILIP BARKER WEBB, ESQ.

PHILIP BARKER WEBB, Esquire, an English gentleman, accompanied by two of his countrymen, Messrs. Edmonstone and Curteis, and M. Parolini, an Italian naturalist, visited, in the year 1819, the environs of Troy, and communicated a concise account of his researches to the editors of that esteemed journal, the Biblioteca Italiana. Notwithstanding all that Mr. Webb's predecessors have written on this interesting spot, the paper in question contains so much that is novel and remarkable, that a translation cannot fail to be welcome to our readers. Mr. Webb is not only thoroughly versed in the knowledge of antiquity, but a distinguished naturalist, and, as such, has greatly contributed to correct essential errors in the writings of his predecessors, most of whom have contemplated the classic soil, on which the heroes of Homer acted, with the eyes of the poet or the antiquary. Mr. Webb first endeavours to deter-

mine the real situation of ancient Troy. Former travellers (Belloni and Pietro della Valle) have suffered themselves to be deceived by the ruins of Alexandria Troas, which immediately meet the eye, and have taken this for the Troy of Homer, notwithstanding the numerous passages of Greek and Roman historians and poets, who affirm, that up to the remotest times there were no traces of the ruins of Troy. Wheler and Sandys rejected, it is true, the errors of the two Italians, but fell into another, affirming, that the ruins of Alexandria Troas are the remains of Ilium immune, or Ilium novum. In the year 1785 this place was visited by Le Chevalier, whose chief object was to remove the contradictions which Strabo, among the ancients, and Wood, among the moderns, thought they had found between Homer's descriptions and the real nature of the ground. Mr. Webb calls Le Chevalier's journey a romantic pilgrimage, and accuses him of fancying that he saw what all antiquity did not see, namely, Pergamus, the Scæan gate, the double wells, and his *Arentem Xanthi cognomine rivum.*

The place where all these fine things are, is, according to him, the village Bunar-Baschi, which the Christians of Giaur-Kevi, and the Jews of the Dardanelles, now point out to all travellers

as the site of Troy. Bryant wrote an essay on the Trojan war, and endeavoured to prove that it had never taken place, and that there never was a city of Troy in Phrygia. Morrit, in his refutation of this essay of Bryant, adopted the system proposed by Le Chevalier, and after having himself visited the spot, supported it by still more powerful arguments than Le Chevalier had done; so that it has ever since been considered as the only true one. Sir W. Gell also adopted it, and the crowd of travellers who have since visited Troy, followed him without reserve. "To doubt of the claim of Bunar Baschi," says Mr. Webb, "or to look for Troy in another situation, would have been a heresy in the eyes of the guides and ciceroni of this country."

In the year 1807, Dr. Clarke visited, though but slightly, the plain of Troy, and remarked immediately, how little Le Chevalier's system agreed with Strabo, Ptolemy, Pliny, and Homer. First, he observed, that the river Mendere could certainly be nothing else than the Scamander of the ancients, for which reason he restored it to the honour of its ancient name, considering the fountain of Kirk-Ghios (*i. e.* forty eyes), and the little streams that flow from it, as belonging to the noble river into which they flow. With Homer in his hand, he looked in the north-east for a

river which might answer to the Simoïs. He erroneously took the Califatli Osmak (*i. e.* the swamp of Califatli) for it; but Mr. Webb affirms, that this is only a vent, where the waters of the lower hills collect, and that, in summer, it is sometimes quite dry; whereas the Simoïs of Homer is described as a rapid stream. Mr. Webb says, that "the river Gheumbrek, or Theumbrek, situated a little farther to the north, is the Simoïs, but that Clarke was misled by the Turkish appellation, not to notice this river. Clarke farther proved that Palaio Califatli is the site of Ilium, which Webb has confirmed by his researches."

In the spring of 1810, Mr. Hobhouse visited the plain of Troy, in the company of Lord Byron. He first conjectured that the Gheumbrek might be the Simoïs, and likewise that the rivulet near the village Atschi Kevi might be the Thymbrius.

"From a view of these writers," continues Mr. Webb, "it appears that our topographical knowledge of the plain of Troy is hitherto very imperfect. The only river, the course of which was sufficiently known, was the Mendere. The others were confounded either with each other, or with rivers which did not even exist. We must consider, however, (besides the impatience and haste of authors,) the want of accommodation

and conveniences on the coast, which obliges travellers to pass the night on board the ships lying at anchor off Tenedos, or in the Dardanelles, and prevents them from proceeding more than 12 or 14 miles into the interior of the country; and we shall be able to account for the insufficiency of many narratives. Some travellers visited the spot in the rainy season, and others only in the dry months. This was another reason of their differing, and often contradictory statements. We saw the necessity of seeking in the midst of the mountains the sources of the rivers, and of following the course of every stream that waters the plain. If we were overtaken by night in these excursions, we endeavoured to accommodate ourselves as well as we could, under the best shelter we could find; and in several places, such as Saliclar-Kevi, just above the sources of the Gheumbrek, we could easily convince ourselves that no European had been there before us. We found that in Troas (in the strictest sense of the term), *i. e.* in the district between the two Capes Rheteum and Sigeum, and the chain of Mount Ida, there are only *three* rivers.

"Whoever undertakes an expedition to Troy, to make new discoveries and observations, will find it neither an easy nor a short task. Obstacles of all kinds, both natural and moral, stand in his

way. The ignorance of the inhabitants, their distrust of strangers, the government of the country, are no inconsiderable hindrances. But above all things, the face of the country itself leads to many errors; because, in some seasons, it is so liable to inundations from all the rivers which come from Ida, and at others so burnt up, that the same beds of rivers leave the traveller in doubt of their origin and the end of their course. Similar difficulties are met with in determining the site of cities. The Turks have always made use of the monuments of antiquity, instead of quarries, from which materials for building might be obtained with less difficulty. This is the reason why it is so extremely uncommon to meet with foundation stones; and we can scarcely be certain that the monument is in its right place, as the Turks drag the stones to a great distance. Burying grounds are another cause of error, as the Turks generally place ancient marbles as tombstones; and these, which are collected from different and distant places, bear inscriptions which often contradict each other, and, therefore, cannot serve as indications of the locality where they are found. Another cause of error is ignorance of the language of the country, and the propensity of travellers to hear the ancient names in the sound of the modern denomina-

tions, with which they never have the smallest connection. We require new facts, new observations, new discoveries of the places consecrated by history, the confirmation of what was doubtful, accurate measurement of distances, &c. We also want a good map of Asia; and many materials for it, which would not be difficult to obtain, are still desiderata. In Turkey there are few or no roads; the natives accustomed to travel by land, have, like mariners at sea, sufficient practice to estimate with tolerable accuracy the distance from one place to another, and express it, as they have no other standard, in hours. Every hour may be taken in general at three English miles; and it is very necessary for travellers to take notice of this estimation, and not to judge by the time which they themselves passed upon the road: for the calculation of the natives gives the time employed by the caravans, which travel at the same pace through the whole empire."

"The site of many an old town may still be discovered. The words *Eski* or *Palaio*, added to the name of a place, ought to be inducement sufficient to any traveller to turn aside from the road and to make investigations. It is equally necessary to notice places where coins have been found, particularly in great numbers. The course of the rivers, and the direction of the mountain

chains, are two points which are but too much neglected, though they afford the most durable testimony. Instruments, especially astronomical, though extremely necessary, can hardly be taken without injury."

The following are the principal results of the investigations of Mr. Webb into the true situation of the ancient places, &c.

1. The mountain chain, of which the modern Kasdagh is the summit, was the Ida of Homer, and of ancient geographers. Kasdagh itself was the Gargarus, or Cotylus of the ancients.

2. Near In-Tepe, on the coast of the Hellespont, was Cape Rhœteum; and near Cape Janissary, on the coast of the Archipelago, was Cape Sigœum.

3. The present Palaio-Califatli is the *Ilium novum* of the ancients, which the Eolian colonists built, when they came to Asia after the Trojan war. Strabo expressly mentions, that they did not build it on the ruins of the city of Priam, but on a place nearer the coast, to which they were induced by Agamemnon's curse, and by the evil omen which was necessarily attached to a place which had suffered such long and such celebrated misfortunes.

4. The present Tchiblak-Kevi is the Iliensium

pagus of the ancients, and consequently, according to Strabo, the Troy of Homer.

5. The Mendere is the ancient Scamander, or Xanthus. The plain through which this river flows, is the real plain of Ilium or Troy.

6. The Gheumbrek is the ancient Simoïs. When the Scamander approached the promontory of Sigœum, and the Simoïs the Cape Rhœteum, the waters united, and formed a kind of pool, which was called Stomalimne; after which they emptied themselves into the sea, on the side of the Sigœum promontory. The present state of the country answers pretty nearly with this description of the ancient geographers. It seems as if the union of these two rivers presented in antiquity the same phenomenon as at present, namely, that they united in the Stomalimne only in the rainy season, forming a kind of lagoon, before they fell into the sea, and that in the dry season their junction was scarcely visible, because they left the same tract dry, or at least marshy. However, the succeeding accumulation of sand may have rendered their union less evident than in former times. The Scamander, properly speaking, is never dry, because the snow on Mount Gargarus only melts by degrees; but the Simoïs, the source of which is on a less ele-

vated part of the chain of Mount Ida, is almost entirely exhausted, towards the end of summer, before it reaches the lower part of the plain, by the artificial irrigations, and the natural drains; a change which is common to most of the rivers of Asia Minor, and European Greece.

The source of the Mendere is on Mount Kasdagh. Different from rivers in general, which are formed by the union of several springs, it rushes in a considerable stream from a natural grotto, on one side of the mountain, and falls into the valley below, in a magnificent waterfall, from a perpendicular height of 50 to 60 feet. The valley is formed by a broad ravine of the mountain, the sides of which rise almost perpendicularly, and in the rudest state of nature, covered with dark forests of pines; while, in the valley itself, and round the mouth of the grotto, prodigious majestic oaks, mixed with oriental planes, rise from the rocks, and appear under a hundred fantastic forms. A stream rushing from the bosom of a mountain, through a mysterious cavern, the recesses of which had never been explored by mortal man, was perfectly formed for the adoration of such an enthusiastic people as the Greeks. Their descendants, even now, pray at the sacred source; and this is one of the many

remains of ancient worship which the oriental church has retained.

A circumstance takes place which has not been observed by other travellers, but is very remarkable. The Scamander has scarcely issued from its grotto, and reached the valley, when the water of a neighbouring hot spring unites with it. The Scamander, at its source, was 43° of Fahrenheit, the air 63°, and the water of the hot spring, where it joins the Scamander, 70°. A heavy rain setting in at this moment, prevented Mr. Webb from reaching the source of this warm spring, which is higher up in the valley, and must be naturally much hotter where it first issues from the rock.

7. The Kamara is a different river from the Gheumbrek, and not the same, as many of Mr. Webb's predecessors have supposed. It is the Thymbrius of antiquity. The ancient Thymbra is the present Atschi-Kevi. Mr. Webb accurately examined the course of both rivers. He followed the Gheumbrek upwards to its source, near Saliklar-Kevi; advanced then, climbing the mountains, to the sources of the Kamara, and pursued the course of that river till its junction with the river Mendere, near the village of Atschi-Kevi. About four miles above the village,

a fine aqueduct crosses it; the centre arch of which is much larger than the others, which still remain, and rises to a considerable height above the bed of the river. On the north-west side of the arch, there are still the remains of a bust, in alto-relievo, which seems to be crowned with laurel. It projects considerably from the keystone of the arch, and is probably the image of a Roman emperor. The Gheumbrek has only two sources. The Kamara is formed by the union of ten or twelve smaller or larger streams, and is a more considerable river than the former, being at no season entirely destitute of water, which is the case in the summer time with almost all the rivers of this country.

8. The marshes near the walls of Troy, mentioned in the Odyssey, are those from which the present stream Califatli-Osmak issues.

The following are some particulars, communicated by Mr. Webb, of other remarkable places beyond the proper plain of Troy.

Mount Kasdagh (*i. e.* Goose mountain), above mentioned, is the highest point of the chain of mount Ida, and the same with the Gargarus of Homer, and the Cotylus of Demetrius. Kauffer found its height to be 4,650 feet above the level of the sea. Webb, however, considering the short time that it is free from snow, namely, two

months and a half, at most three months of the year, thinks it is much higher. Clarke, and other travellers, have described the dangers and difficulties attending the ascent to its summit. Mr. Webb, on the other hand, observes, that when it is free from snow it may be ascended with equal ease and safety. The line of eternal snow, in 40° of latitude in the northern hemisphere, is about 9,000 feet. The Kasdagh must, therefore, approach much nearer to this elevation than the abovementioned estimate. Its greater elevation is confirmed also by the view of it, and by the estimate which travellers, after some practice, are able to make of such objects. "We were not able to use barometers," says Mr. Webb, "having unfortunately broken ours before we ascended the mountain. These instruments are too delicate and fragile for travellers in Turkey. The first day that we attempted to ascend the mountain, we only reached the source of the Scamander, and unfavourable weather compelled us to go back and seek shelter in the stable of Eugilar. On the following day (9th of October), we had the good fortune to see the sky without clouds, and happily reached half way to the object of our wishes. The thermometer fell, on the summit, in the shade at noon, to 4° Reamur above Zero; and scorched as we

were, by the burning heat of the plains of Asia, we severely felt this unexpected change, which at another season would have been agreeable. The prospect from this spot is magnificent, and compensates the fatigue of the journey, not only by the great extent of the horizon on every side, but by the historical and classical recollections which it calls forth. Under our feet lay Phrygia and the plain of Troy; around us the Propontis, the Hellespont, Thrace, Mysia, Bithynia, Eolia, Ionia, and the sites of all those celebrated cities of Asia and Europe, of which nothing remained but the name. Farther, we beheld the Egean sea and its islands, and in the horizon the lofty summit of Athos."

"We passed three days in Eugilar (*i. e.* in the Turkish hunting-house), in a miserable half decayed building; and from thence we visited the little hill Kuschunlu-Tepè, situated between Eugilar and Bairamitche. It was discovered by Clarke, who conjectured that it was the site of the temple of the Idæan Jupiter. We next observed the fine road, sixteen fathoms broad, which runs round the hill to its summit; but, of the various monuments which that traveller mentions, there is not a stone or a brick left, because Hadim Oglu Pascha had made use of this mine of old materials, for his buildings

situation of the city in the rich valley watered by the Andrius. Its admirable position renders it even now a flourishing and populous town. Not far from it a basalt hill, called by the Turks Enè Tepè, and by others Sovràn Tepè, in which name Clarke saw the tradition of the tomb of Eneas, or the memory of some great and powerful sovereign buried there. Yet it is nothing but a natural hill, though, as is usual with rocks of this kind, it appears to be artificial.

"Alexandria seems to have absorbed all the little towns and villages in its vicinity; some of them, however, still existed in the time of Strabo, and it will not be beside our purpose to determine their positions here.

"Acheum was directly opposite to Tenedos, and was the place of embarkation for that island. This would lead us to look for it on the promontory now called Koum-Burnù; but I am inclined to place it to the south of that point, by the circumstance mentioned by the geographer in another place, that Alexandria in his time reached to Acheum. At any rate, it appears certain that it never reached to Koum-Burnù; because we have no remains of the city beyond the little river called Sudluck-Su; and, in fact, its walls may even be seen at Damian-Kevi, near which is a series of sarcophagi, some

buried in the ground, and others half uncovered, of which the Turks make use when they want a vessel for their fountains. From this place was taken that beautiful one in the town of Bascià, (Bascià-Ciflik), with the inscription copied by Dr. Clarke, and that also which is at Uggiek, with the inscription likewise copied by the same traveller.

"But now we are mentioning these sarcophagi, there is none, perhaps, so interesting as that which contains the ashes of the father of the celebrated Herodes Atticus, the benefactor of every Grecian city, especially of the Troad, with the ashes of Claudia Seconda, his mother; which, if we may give credit to Dr. Clarke, now serves as the reservoir of a fountain in the market place of the little village of Tenedos, as if to show to the passenger the vanity of human endeavours to transmit to posterity the memory of ourselves. Claudia Seconda, as the mother of one of the most noble and best practical philosophers of antiquity, has had, in the memory of her virtue, a much more durable monument:

'Quandoquidem data sunt ipsis quoque fata sepulcris.'

"Opposite Tenedos, besides Achæum, as above mentioned, is also Colonæ, a town mentioned by Thucydides, of very ancient origin, and the

kings of which are spoken of before the expedition of the Greeks under Agamemnon. Of equal antiquity, and situated a few miles from Colonæ, was also the Trojan Larissa, both cities founded by the aboriginal race of the Pelasgi, expelled by the Greeks. From the ancient people who preceeded them, they adopted, and transmitted to posterity, the singular rites of the Cabiri, and of Ceres Euxina, and other symbols and vestiges of a purer religion, and the remains of an unknown language, which they in vain tortured, to adapt it to the Greek etymology, and which was preserved in the names of the towns and countries. No name, in fact, is met with so frequently in all the places which were peopled by the Pelasgi, as those of Larissa and Colonæ, both which are found in Attica, the last abode of those people, and in various provinces of Europe and Asia, which Strabo has taken the trouble to enumerate.*

* A similar emigration takes place at present from the mountains of Epirus into all the rest of Greece. The ancient Greeks form a population which daily diminishes, and yields to the ancient and nervous race of the Albanians, from whom the Greeks are easily distinguished. The Albanian dialect has not yet been used in writing. In Epirus itself, they write in Greek, and wherever they settle in Greece, they use the Greek

"In the middle of these three cities, Antigonus founded the new city, first called Antigonia; and, afterwards honoured by Lysimachus with the name of Alexandria, and partly by the command of the founders, and partly by the immunities and privileges granted by them, it attracted into its walls the population of all the ancient neighbouring cities, which were reduced to the state of surburbs of the illustrious town (Splendidissimus populus Colonia Augusta Troas) which, in the sequel, divided with the proud Ilium the favours of the masters of the world, and the honour of being considered as the first cradle of the Cæsars.

"It would be superfluous to describe here the ruins of Alexandria Troas, a subject which has been so often and well treated by preceding travellers. No discoveries are to be expected here; nevertheless, we had the good fortune

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language. The flourishing establishments of Hydra, Spezzia, Poros, Ipsara, are all Albanians, and though they write and speak Greek, yet their ordinary language, both in the towns and on board their numerous vessels, is the Albanian, as we have often had opportunities of observing. The log, the journal, the account book, are kept in Greek; but their conversation and naval command are always in Albanian. We have collected some interesting particulars respecting these rising establishments, which we may, perhaps, publish on another occasion.

to find one or two inedited inscriptions, and to procure some medals, among which there is one of Alexandria Troas. These ruins, in more tranquil times, may afford ample materials for future excavations; and inscriptions may perhaps be found there, which will throw great light on the precise situation of the ancient cities which adorned that formerly populous and favoured country.

REMARKS ON THE CLIMATE AND NATURAL HISTORY.

In the happy climate of the mildest temperature of Asia, the inhabitants of these countries enjoy a winter moderated by the breezes blowing from the Mediterranean, and a summer mitigated by the periodical return of the Etesian winds. Its luxuriant fields, its fruitful vallies; the abundance of streams flowing from Mount Ida; the variety of the ground, sometimes level, sometimes mountainous; the copious rivers, the vicinity of the sea, the beautiful prospects; in short, the whole situation of the country is such, that nature leaves nothing to wish for—only people are wanting: "*Desunt manus poscentibus arvis.*" The want of population has converted the blessings of nature into a curse; and this is the

reason of those pestilential exhalations which have rendered the disorder, which Homer describes under the image of arrows discharged by Apollo, endemic in all Troas.

The appearance of the country is, in the highest degree, picturesque; and, in places, reminds the Englishman of the landscapes of his own country. Phrygia owes this resemblance particularly to the fields surrounded with green hedges, and to the trees irregularly scattered, either singly, or in groups, which give the whole the appearance of a park. As in England, the land is chiefly sown with corn, and there are but few vineyards. The lower part, and that which is properly the plain of Troy, is broken by manifold elevations and hollows, which, as a continuation of the ravines of Ida, slope gently to the sea. Towards Dardania and Cebrenia the chains of Ida rise one above the other, and are covered with immense forests of pines. By means of the basalt masses of Balli-Dagh, these chains unite to the granite mountains behind Alexandria, in the middle of which rise those conical summits which are seen far out at sea.

Thus the first circle is closed which surrounds the scene of the Iliad. Beyond it lies the fruitful territory which formerly belonged to Neandria, and the domain of Skepsis, which is separated

from Cebrenia by the Scamander. This river seems once to have formed in this valley a long lake, till some natural convulsion broke through the picturesque rampart of the Balli-Dagh, through the opening of which it flows into the plain of Troy. Still farther back, the peak of Gargarus closes the scene.

The zone of forest that surrounds that mountain, is still in the rude state of nature that it was at the time of the Trojan war. These forests are inhabited by bears, wolves, and jackals, which hunt in troops. Even tigers are sometimes seen here, if we may believe the people of the country. The plain abounds in birds of all kinds, and numerous small animals. We were witnesses of the annual flight of the noisy cranes, to which Homer so poetically alludes, and which must be seen here, to form a just idea of the beauty and truth of his similitudes.

The only advantage derived from the woods, is the pitch that is procured from them. The inhabitants of Koluri are, almost exclusively, occupied in this labour. These inhabitants of the ancient Salamis come, annually, in great numbers; and, as a recompense for this hard work, they are free from the poll-tax paid by the Christian subjects.

The common pines of Mount Ida are, *pinus abies*, *picea*, and *sylvestris*, in the upper zone; besides which, there is another, which appears to be a particular species, though not very different from the *pinus maritima*. In the lower tracts, the *pinus maritima* grows in abundance; and, nearer to the coast, the *pinus halepensis*, which, with its long needles, resembling *pinus strobus*, considerably heightens the beauty of the prospect. In the lower parts of Ida, different kinds of oak are mixed with the pines; such as, the *quercus robur*, *pedunculata*, *cerris*; and, about Kuschiunlu-Tepe, a very beautiful species, with deeply indented leaves, probably the *quercus crinita*. This abundance of pines often gives the interior a resemblance to Tyrol, and particularly in the upper part of the valley of the Gheumbrek. The plain and the lower hills are covered with small trees, chiefly with the useful species of oak which produces the acorn (*quercus ægilops*,) which being carefully cultivated, and irregularly scattered over the whole country, above all produces the picturesque effect which I described before. The ruins of Alexandria Troas are covered with a forest of these trees, which seem to thrive better in the plain, and on the granite eminences turned to the south, than on the schistous precipices of the ravines of Ida. This tree, left

to itself and its natural developement, grows majestically like the rest of its species. It, however, generally assumes a stunted appearance, because the fruit, or acorns, are annually beaten off with poles. The fruit is gathered a short time before it is ripe, and being thrown into heaps, undergoes a fermentation, by means of which the nut is separated from the cup; after which they are brought into the open air, and, as soon as they are dry, are fit for use. This is the chief production of Troas, and is sent yearly in large quantities to England.

Besides the above, there are, also, the *quercus infectoria*, and *quercus coccifera*, which seldom grow higher than a bush. The first produces the gall-apples, well known in commerce, which are excrescences in the form of a nut, caused by the puncture of an insect. The other produces the red grains which are used in dying. In Troas, however, none of these things are regarded or collected. The *quercus ilex* is sometimes found in company with the other species.

Among the other plants, are; *dianthus juniperinus* (which in October was found in flower, on the summit of Gargarus); *centaurea aurea* (in the same place); and, in its vicinity, a very beautiful purple garlic; rather lower down, *crocus autumnalis*, *colchicum autumnale* and *variegatum*,

ephedra spiralis, *cytisus divaricatus*, *amygdalus communis*, &c. Between Bujuk-Bunar-Bashi and Aiwagek, Mr. Welsh discovered a plant, which he took for a variety of *amaryllis lutea*; but, after a careful examination, he found that it was not only a different species, but of a hitherto nondescript genus.

There are numerous flocks of sheep, which are said to yield annually 4,000 okes of wool, (the oke is two pounds and a half). Horses, buffaloes, and oxen, are kept here. Large caravans of camels, carrying goods to Constantinople, are often met with; but they only pass through, and are no where bred in the country. In general, the cultivation of the land, in many places, resembles that of the Campagna di Roma. Nearer to the villages, and particularly in the territory of Hadim-Oglu, the prospect changes, and we see there considerable industry; the women, without veils, work in the fields with their families. Round the Greek villages, especially Ghaur-Keui, and Jeni-Keui, a great deal of wine is made. The black wine of Tenedos, if it were better managed, need not fear a comparison with the best French wine. They have not here the bad custom which prevails in all the Morea, of mixing resin, or pitch with the wine, that it may keep better; which

gives it a disagreeable taste, quite intolerable to those who are not used to it.

On the banks of the Gheumbrek, and partilarly in the village of that name, the Turks themselves have vines, of the fruit of which they make a kind of syrup, which they call *Petmez;* or they dry the grapes in the sun, and preserve them for winter use. Grapes, water-melons, and other fruits, constitute a great part of their food during summer. They sow in their fields the *Solanum melongena*, and the *Sesamum orientale*, from which they prepare an excellent oil; and the seed, mixed with that of the *Nigella damascena*, they spread on their bread. They also cultivate the *Hibiscus esculentus*, and pease, beans, lentils and other leguminous plants. The most productive articles are cotton, wheat, and maize, of which the yellow variety is the most common. There are also some silkworms. In the management of their figs, the inhabitants make use of the ancient art of capricification. The pomegranates attain an extraordinary size.

There are no investigations at which the suspicious Turks take so much umbrage, as at those made by Europeans respecting geology. Antiquaries, who enquire after the ancient cities of the neighbourhood, or attempt to make any ex-

cavation, are immediately suspected of looking for some hidden treasure, pointed out in one of the ancient inscriptions, which they are seen to copy with so much attention. But if they should enquire after some mine, or be seen in a cave with a hammer in their hand, the suspicion becomes certainty, and they are immediately declared to be in search of gold, or some stone which can convert other substances into that metal. Even the Christians are afraid, lest the secret of any mine should become known to the Turks, and they be compelled to work it for their rapacious masters. The Turks, too, are on the alert to take advantage of the discovery of the ingenious strangers, and to defraud them of their booty. While we were examining the little islands, formerly called Phineadae, situated in the Euxine, at the mouth of the Bosphorus, we were made prisoners, and taken before a most ignorant Aga, whose confined understanding could with very great difficulty comprehend our justification. Another instance of this appeared in the difficulties we met with in the Troad, to persuade our guide to conduct us to the abandoned silver mines of Maden Magara. When, at length, triumphing over their objections, we reached the spot, sentinels were placed all round to discover, at a distance, if any Turks approached; our

guides being afraid that the Aga of Eski should learn that we had been conducted thither; the consequences of which might have been great inconvenience to ourselves, and a severe bastinado to our guides.

The Troad forms a part of those Phlegrean fields of Asia Minor, which are so frequently mentioned by the ancients, and which the moderns, as far as I know, have not yet described. We may boast of having been the first among the moderns who have observed them, and have brought specimens before unknown in the mineralogical cabinets of Europe. The whole Troad is not of this primary volcanic formation; the north and north-west of the country consists of primitive rocks, but that south of the Scamander is volcanic. The mountain of Gargarus consists of micaceous slate, accompanied by immense deposits of primitive limestone, which compose the middle zone of the mountain; and in this latter is the grotto from which the Scamander issues. Some persons, induced by curiosity, have penetrated about a hundred fathoms into it, without being able to reach the source. The village of Gheumbrek is built on basalt; and a little above the river, limestone is found, and, still farther, it is mixed with the serpentine.

Alexandria is built upon a grey granite, com-

posed of the three usual elements; felspar predominates, and gives its colour to the whole mass. This rock served for the magnificent edifices of that city. Many columns are lying on the beach, destined, perhaps, to be embarked and carried elsewhere; many others have been cut to pieces and made into cannon-ballby the Turks; others were taken away by the Greek emperors, and even by the Turkish sultans, to adorn the buildings of the metropolis. This granite occupies the whole country behind Alexandria towards the east, as far as the valley of Ené.

On the way from Chemalli and through Ené, about two leagues from the city, are the silver mines which the Turks call Maden Magara. The ore, from which the silver is extracted, is a galena imbedded in granite. This mine is worked only at intervals. Having descended the hill about a hundred toises, we found ourselves on a volcanic tuft, succeeded by columns of clinkstone, and then by trachite, which continued as far as Ené. Many reasons induce us to believe that this granite of Alexandria is of much more recent formation than the old granites, which, according to the Wernerian system, commence the series of primitive rocks.

The valley of Beyramitche, like the other lateral valleys which issue into it, consists of the

floetz limestone of the Troad. Several rows of hills advance from the south into it, all of them of trap or basalt, coming from the great central point of the ancient volcanoes of Assus, which may be called the Auvergne of northern Asia. At Mantascia, about a league from Assus, on the road from Aivagek, lies a ruinous castle on a small mountain, which hangs over the river, over which there is a bridge with pointed arches. This hill has all the appearance of an extinct volcano; and we observed at a considerable distance a stream of trachite lava. Though the volcano is now extinguished, there are evident indications of the internal convulsions of the earth, and of the frequent earthquakes to which this country is subject. An immense theatre below the Acropolis, hewn in the rock, and sloping towards the sea, is nearly in ruins. On the Acropolis are the remains of a Doric temple, formed of masses of trachite, with bas-reliefs in the most ancient style, resembling those of the temple of Jupiter Panhellenius, at Egina, also carved in the trachite, ruined, and scattered around in every direction. The walls of the city are about five miles in circuit, and these are the only works which have resisted the ravages of time, and the convulsions of nature. These walls are ten English feet broad, and built of

large blocks of trachite. They are in many places like those of Pompeii, and much more magnificent. The gate on the land side also remains entire. Large sarcophagi of trachite on one side, and stupendous walls on the other, impress the traveller, on his entrance, with ideas of grandeur and melancholy. The first edifice that occurs just at the entrance is the Gymnasium, described as such in an inscription which still remains; and, a little farther, the theatre, above which tower the ruins of the Acropolis.

THE SALT LAKE OF INDERSKOI,

AND ITS ENVIRONS,

IN THE KIRGHIS STEPPE, IN ASIA.

THE following accounts of this remarkable lake, which lies between the 48° and 49° north latitude, are extracted from a journey in the south of Russia, performed by Dr. Tauscher in the years 1807 to 1811; only fragments of which have yet been published. Hitherto, we were indebted to the celebrated naturalist Pallas, for the only accounts we had of this salt-lake, which has many peculiar natural productions. He visited it on his first great tour through Asiatic Russia, in the years 1763 to 1769. As no naturalist has since explored that interesting country, and the accounts given by Pallas are short and incomplete; and as Dr. Tauscher's journey in these inhospitable tracts was accompanied with circumstances calculated to excite general interest, a short sketch of it will certainly be welcome here, as a fragment and specimen of a complete history

of his journey in southern Russia, which we hope to give on a future occasion.

The author prefixes to his description of the Inderlake, and the account of his tour along the banks of it, some general outlines of a picture of the steppes of southern Russia, as he had an opportunity of observing them in the immense tract extending between the Don, the Wolga, and the Ural, and to the northern coast of the Caspian sea.

The southern steppes bear a very peculiar physiognomy, different from the natural scenery of European countries. The eye is lost in immense plains, but seldom broken by an inconsiderable eminence, which are without trees or forests, poor in rivers and water, destitute of permanent habitations, villages or towns, and perpetually traversed by nomade tribes, who live in patriarchal simplicity, and remove from place to place with their dwellings and flocks, as circumstances require. These desolate plains resemble in a great measure the trackless ocean, which the navigator must cross by the guidance of the compass.

Early in the spring, and soon after the melting of the snow, the surface of the steppe is covered with a charming and peculiar vegetation. Astragalus, tulips, hyacinths, and other fine flow-

ering plants, make it appear like a gay garden. But the soft verdant carpet, which at this season adorns the meadows of the north and middle of Europe, is entirely unknown in these plains. Only a few scattered plants partially cover the ground, and larger or smaller intervals of bare soil always remain visible between them. The scorching heat of the summer months, which in June and July often rises at noon to 30° and 35° Reaum. almost entirely destroys the children of Flora. All the plants wither, and the soil creaks under the foot of the traveller. At this season of the year, the dry grass of the desert is frequently on fire, either by chance or design, the flame of which reddens the horizon by night, and by day the thick clouds of smoke obscure the sun. These fires, fanned by the wind, often spread with incredible rapidity, and only the interposition of a river, or a very broad road, can stop the progress of such a torrent of flame, which, especially in the night, affords a splendid and awful sight. The heat would be still more intolerable, but for a cooling east wind, which regularly prevails from 10 or 11 o'clock in the forenoon, to three o'clock in the afternoon, and moderates the sultriness of the atmosphere, in the deserts situated on the Wolga and the Ural, between 45° and 50° north latitude. But if this

wind should happen to blow over parts of the desert which are on fire, it becomes impregnated with almost intolerable heat, and, like the Arabian Samoom, relaxes and paralyses all the animal powers. Storms are not frequent in these parts, and when they occur, they are always inconsiderable. The thunder clouds, which, in other countries, being confined between the mountains, produce the severest tempests, have here so wide a range, that they cannot become dangerous. At no season of the year does a drop of dew spangle the parched soil of the steppe, and rain is very rare. The dry nitrous clay, of which the greatest part of the soil of the steppe consists, is rendered by the heat as hard as a rock, and clefts, a yard deep, open in its surface. In those tracts which are covered with quicksand, it becomes dreadfully hot, through the action of the sun's rays. It is singular enough, that this burning sand, in which it might be supposed that no plant could possibly thrive, is distinguished from the clayey soil, by a more active and luxuriant vegetation.

At the close of autumn, the steppe produces a peculiar Flora of remarkable saline plants, of which no country in the world has a greater variety than the parched soil of southern Russia.

The cold in winter, according to accurate observations made in the Moravian colony at

Sarepta on the Wolga, that is, between 48° and 49 north latitude, has been known to be 32° and 33° Reaum. Here, as at Moscow and St. Petersburg, quicksilver has been seen to freeze in the open air. There are probably few parts of Europe which experience greater vicissitudes of heat and cold.

Hills and mountains are very uncommon in the desert itself. There are, however, in the steppe, between the Ural and the Wolga, some eminences of very considerable height. These are the Mount Bogdo, and the rock salt mountains Tschaptschatschi and Arsagar. The first, with the salt lake of the same name at its foot, is extremely remarkable, because it incontestibly rose formerly as a distinct island, above the ancient level of the sea. Its base, which is of granite, bears evident traces of this fact. Tschaptschatschi and Arsagar, which are situated more to the south, are not less worthy of notice. They consist of large solid masses of the valuable rock salt, which is not inferior to that found at Wieliczka in Poland, and at Ilezk in Orenburg; though, on account of the remote distance, and the difficulty of conveyance, hardly any use is made of it. It likewise differs from the salt last mentioned, in forming a mountain of considerable height; whereas the other is found

in strata under ground, and must be obtained by the operation of mining.

If, to the peculiarities of inanimate nature in the steppe, we add its living inhabitants, the nomade tribes of shepherds, of Tartar and Mongol origin, incessantly roving about with their flocks, and the animals peculiar to the desert; it may be readily conceived that the steppe presents a picture extremely different from all European countries, which, it is true, cannot vie with the cultivated parts of Europe; but offers the observer of nature and mankind ample materials for interesting remarks. Among the animals, we will mention only the camel, (*Camelus Dromedarius*); the antelope, (*Antilope saiga et gutturosa*); the jerboa, (*Dipus jaculus et sagitta*); the wild horse, (*Equus caballus*); the Polish marmot, (*Arctomys Bobac*); and the Casan marmot, (*Arctomys citellus*); which are extremely numerous in some parts.

The low steppe of southern Russia has evidently been gained from the sea, and was formerly a part of the Caspian. The ancient limit of that sea may still be clearly distinguished and ascertained. It is pointed out by a continous chain of hills, extending from the foot of Caucasus, through the Cuman desert, to the Wolga,

passes thence near Saratow to the opposite bank of the river, runs along the right side of the Irgis, and loses itself near Orenburg, on the other side of the river Ural, in the unknown tracts of the Kirghis desert. A very remarkable difference is observed immediately on this side of the ancient limit of this sea, in the more elevated tracts, both in the greater fertility of the soil and in its productions. The stunted vegetation of the plants, on the low ground of the steppe, the corruption of which has not produced any vegetable earth; the frequent saline springs and lakes, and solid masses of salt; the soil, which is every where strongly impregnated with saltpetre; the quantities of shells, which are still found loose, and in perfect preservation, in the isolated sandy tracts of the desert, which resemble the species still found in the Caspian sea; every thing gives the greatest reason to infer the later formation of this desert.

The boundaries of the European and Asiatic steppe, subject to the sceptre of Russia, are, on the south, the Caspian Sea, the mountains of Caucasus and the Black Sea, and the Sea of Asowf; on the west, the Ukraine; on the north, on this side of the Wolga, the governments of Pensa and Simbirsk; on the other side, the governments

of Kasan and Ufa, or Orenburg; and lastly, towards the east, the course of the river Ural, formerly called Jaik.

The superficial extent of the steppe, within the above limits, is about 2,600 square versts.

The south and south-eastern boundaries of the steppe, and of Russia in general, are marked by a series of fortifications, which are called by the general name of the Line.

This, which is called the south Russian line, is nothing more than a continued chain of fortified posts, at different distances; a number of which, according to their respective geographical situations, are called by distinct names, such as Caucasian, Ural, Siberian line, &c. &c. Each of these divisions, or districts of the line, has its chief town, in which the military commander generally resides. For instance, Uralsk, on the Ural; Mosdock and Georgiewsk, on the Caucasian; and Tscherkask, on the line of the Don; which are no way inferior to the better built middling towns of Germany. But these forts frequently consist of nothing else than some mean huts, surrounded by wicker hurdles, and enclosed by a shallow ditch of inconsiderable width. The inhabitants are partly Cossacks, partly a mixture of nomade tribes, of Tartar and Mongol origin, who serve as Cossacks. They are obliged to

patrol day and night along the frontier of their district, and to defend it from hostile attacks. In fact, the want of security, especially on the Ural and Caucasian line, is such, that it is rarely any body goes out of the house unarmed, and a petty warfare is constantly carried on. Each party continually harasses the other, and when opportunity occurs, carries off both people and cattle.

As the author's object, the salt lake Inder, was beyond the *Ural* line, and consequently out of the Russian boundaries, on the other side of the river, he chose the nearest post to make preparations for undertaking, with safety, an excursion to the Kinghis steppe on the other side. This was the fore-post of Inderskoe, 700 versts below Orenburg, from which the salt lake is 60 versts distant, in a direct line towards the east. Dr. Tauscher arrived there in the beginning of May, 1810, having been liberally furnished with the necessary orders and assistance for this expedition, at Orenburg, by the governor-general, prince Wolchonskoi.

He had only two travelling companions, namely, Mr. Hermann, a clergyman from Kasan, a young man full of zeal for the study of natural history, who was of great assistance, especially in his botanical researches, and a servant, Jacob

Judizky, who was a skilful huntsman, and in the sequel procured for his master many rare and beautiful birds.

The fore-post of Inderskoe, or Gorskoe Krepost, is situated immediately on the bank of the river Ural, and is one of the most inconsiderable places of the lower Ural line. It consists of only 40 or 50 dwellings, inhabited by about as many Cossack families, commanded by an officer of inferior rank, without any fortification, and merely surrounded with narrow ditches and a wicker fence.

To give some idea of the wretchedness of the buildings of the inhospitable tracts, which are destitute of wood and stone, the author describes the dwelling which was assigned to him, and which was one of the best in the place. The walls consisted of double wicker work, with earth rammed between. Little openings, furnished with sliding shutters, and bladders, instead of glass, served as windows, and afforded but a scanty light. Two divisions, on the right and left hand, formed two rooms, having in the middle the passage, with the entrance. The interior of these rooms was pretty neat, plastered with clay, and whitewashed; the floor was not boarded, on account of the want of wood; the roof scarcely the height of a man, flat, according to the eastern

custom, and covered with stamped earth. In the hot season they generally sleep on these roofs to enjoy the cool evening air, covering themselves, however, with a veil. The interior arrangements, as may be supposed, were likewise very indifferent. Along the walls were fastened pretty wide benches, which were sometimes covered with Kirghis felt, of different colours, which, according to the Tartar custom, served instead of bedsteads and tables: actual tables are found only in the houses of the more opulent. Nearly one-third of the room was occupied by an immense square stove of bricks. No trace of ornament, or decoration, was to be perceived in the interior; unless we reckon the images of saints, which are never wanting, but always placed in a corner of the room, and held in great veneration by the inhabitants. After our travellers had profaned every room by their arrival, the owners took them carefully away, and afterwards concealed them.

Such is the appearance of the inside of these dwellings; and it may hence be concluded, that the inhabitants are very low in the scale of civilization, and have but few wants. The common Cossacks, the predominant nation, though rather superior to the Tartars, Kirghis, and Calmucks, with whom they are mixed, are very

little above the rudest sensual wants. They are rather a people of fishermen and hunters, born soldiers, than herdsmen and peaceable country-people. Their chief wealth is derived from the Ural. This river, abounding in fish, and the privilege of fishing in it, of which they are very jealous, is the source which satisfies, directly and indirectly, all the wants of the Ural Cossacks. It has, however, not yet produced among them such a degree of prosperity and abundance, as to lead to luxury, and a taste for more refined enjoyments. Their wants are few and simple, and this keeps them robust and healthy. The author saw, among them, men of 80 years and above, who were as strong as a youth of 17.

The moral character of the inhabitants of the steppe is by no means without its good qualities. Even the common uncivilized Cossack of the Ural possesses a great share of blunt honesty, good nature, and hospitality, which renders him very estimable. It is almost unnecessary to say, that there are, among the inhabitants of the greater towns and superior classes, many well-educated persons, who would do honour to any rank or country.

The environs of Inderskoe consist of a barren, dry clay desert, on the soil of which there are neither stones nor trees. It is only in the low

grounds near the river, which are covered during the inundation, that willows and poplars are met with, and also some peculiar species of trees which thrive in this climate. Neither hay nor corn are grown in this arid country. Some spots, here and there, are cultivated as gardens. They have melons, water-melons, and other vegetable productions, especially in such places as are covered by the water during the periodical inundation of the river. The mud which it leaves behind, like the Nile, produces in the sequel a rapid and luxuriant vegetation.

A violent attack of fever, of which the author had already felt some symptoms, as he passed through Orenburg, increased so much as to render it impossible for him immediately to visit the lake on the other side, which was 60 versts distant. A favourable opportunity, however, occurred to send his companion Hermann.

The inhabitants of the neighbouring posts receive permission several times in the year to get salt for their use from the lake. They always go in great numbers, well armed, and with every military precaution, to avoid the hostile attacks of the plundering Kirghis, who attempt on these occasions to seize and carry off people and horses. On the second day after the arrival of our travellers, such a caravan set out

to procure salt, and Hermann was able to go to the lake with perfect safety under their protection. He returned from the opposite shore on the third day, quite enraptured with the wonderful place he had seen, and the curiosities of the dominion of Flora which he had found. In fact, the result of the first excursion, with regard to botany, exceeded all expectation. He brought with him not only most of the plants previously found and described by Pallas, but also some other species, which, on a careful examination, in the sequel were found to be for the most part new. The principal were: *Amaryllis tartarica, Pall.; Rheum Caspium, Pall.; Carex physodes, Marsch.; Cachrys odontalgica, Pall.; Asparagus verticillaris, off.; Allium Caspium*, several astragalus, (of which one, allied to the A. physodes L. is new, and has since been published under the name of Astrag. Pallasii), a beautiful new *Orobanche*, a new *Asphodelus, inderiensis Fisch. &c.* Hermann praised extremely the civility of the leader of the caravan, in affording him all possible assistance.

The fever, however, which regularly returned every other day, enfeebled Dr. Tauscher so much, that he was scarcely able to leave the room, or even his bed, on the intermediate days. Hermann, however, daily made longer or shorter

excursions in the neighbouring country. It unfortunately happened, that, among the medicines which they had the precaution to bring with them from Moscow, there was no Peruvian bark; and there being neither medicine nor physician at Inderskoe, he was obliged to send for some Peruvian bark to Uralsk, 200 miles distant, where there was a regimental surgeon, and a laboratory belonging to the government. His health gradually improved after he had taken this medicine, and, on the 20th of May, he found himself sufficiently recovered to venture upon the expedition to the opposite bank.

As a protection from the predatory Kirghis, prince Wolchonskoi had ordered an escort of 200 men and one cannon. These people were collected from several neighbouring posts of the line, and had already been some days at Inderskoe.

The author's plan was to spend three days at the least on the banks of the lake, and, if possible, to go quite round it; in order to form a complete idea of its extent and nature, its remarkable environs and productions.

A large tent for himself, a new and clean kibitke, belonging to the officer who accompanied him, a light carriage to convey the paper necessary to preserve the plants and other requisites,

and, in case of need, himself and his companions, were the principal articles which he took with him.

The 22nd of May was fixed for the long desired accomplishment of this plan. The preparations for crossing the river, which were directed by the commandant of Inderskoe, could not be carried on so rapidly as the impatience of the travellers desired. The river is half as broad again as the Elbe at Dresden, deep, but not rapid. There was only one pretty large boat to convey the carriages and other effects, successively, to the opposite bank. The Cossacks swam over the river, with their horses. This operation seems not to be without danger, and proves the courage of this intrepid race, who are very familiar with this element. The Cossack, who intends to cross a river, drives his horse into it, plunges in after him, and swims through the stream with him, with the aid of his left arm, holding the bridle with his right hand, which he lays on the horse's back. Only the heads of the man and the horse remain above the water. It was a singular circumstance to see a carriage, with the horses to it, swim over the river. A Cossack, placed like Neptune, in the front of the carriage, guided the frail vehicle through the stream, flourishing a knute instead of the trident.

Dr. Tauscher had crossed the river first of all in a boat, and amused himself in collecting insects and plants. The country on the Asiatic side appears to be quite different; it is sandy, and the author immediately saw some plants which he had not observed on the right side of the river. An asparagus, allied to the *verticillaris Bieb.*, which in the sequel proved to be a new species, had an agreeable taste.

Their passage was completed in a few hours, and every thing safely landed on the left bank. The author now amused himself in examining his company. The whole had a motley appearance. It was a medley of several nations, which, besides the proper Ural Cossacks, consisted of Calmucks, Tartars, Kirghis, &c.; rude sun-burnt countenances, more noble Tartar manly features, and flat Mongol effeminate countenances, with beardless chins, small sunken eyes, and high cheek-bones; some covered with cloaks made of sheeps' skin, with the rough side outwards; some in tanned horse-hides, some in short fur cloaks with hoods, and a few in a light dress and a shirt; the head covered with a large fox-skin cap, or with a conical felt hat, or without any covering.

Their arms were no less different than their costume. The smallest number had fire-arms,

some only a single pistol, most of them pikes, others bows and arrows; and several only a sabre, and others again none. Such was the appearance of the soldiers of the Ural, who came to protect our travellers from their hereditary and frontier enemies, the Asiatic Kirghis, on whose territory they in fact were.

A troop of Kirghis, in eight or ten tents, whom they found on the other side of the river, though they were said to be of the Russian party, were ordered to take down their dwellings and depart with their herds farther into the steppe, because the officer, who accompanied the author, judged it unadvisable to have these equivocal friends in the rear.

The company now proceeded in an easterly direction: but this was done without much regularity. The escort dispersed, and each took his own way. Even the cannon was at one time so far off, that the author lost sight of it, and it might easily have been taken by the Kirghis, who were said to be so formidable.

Dr. Tauscher thought of remedying this confusion as well as he could; ordered the cannon to be near his carriage, and, after a march of five or six hours, reached the first watering place, a small lake of good water, where they halted.

In a few hours they set out again, because

the author wished to reach in the same day the vicinity of the lake, which was still 20 miles distant.

The ground from this place rose to a gentle eminence, and became of a different quality. Whereas it was before sandy, not wholly destitute of water, and covered with a pretty luxuriant vegetation; it was now dry and clayey. Here and there gypsum-like stones stood out, and the vegetation was less fresh. Several of the plants which Hermann had found on his first visit to the lake, were met with here, such as the beautiful *Orobanche*, with light blue flowers, *Allium Caspium Pall.*, *Allium inderiense*, n. sp. and a small *Tetradynamist*, with the boat-shaped seed vessels allied to the *genus Bunias*, which plant was afterwards designated as a new *genus*, and called by the author's name.

Towards evening they reached their journey's end, namely, some ditches, about a verst from the lake, with brackish, but yet drinkable water. Here the travellers pitched their camp, planted the cannon, and placed posts on the surrounding eminences to prevent surprise. The visit to the lake was deferred to the following day. They amused themselves, in the meanwhile, in rambling through the neighbourhood, so far as the lateness of the hour would permit.

Isolated ridges, with abrupt irregular sides, rose here and there upon the higher surface of the steppe. They consisted of alabaster and a gypsum-like rock, where only a few single plants were growing: *(Cheiranthus odoratissimus, off. n. sp.; Astrag. rupifragus, hamosus; Adonis apeninae, off.; Thymus Marschallianus.)*

Pretty deep pits, of greater and less extent, disclosed the interior of the soil, and showed that it also consisted of such a dirty white mass of alabaster. The surface of the ground was covered with a dazzling white gypsum, in many places for several thousand paces, which was entirely destitute of vegetation. The rest of the ground was saline clay, and but scantily covered with herbs. The most luxuriant vegetation was found on the sides of the above named pits or clefts.

From the place where the company were encamped, the banks of the lake gradually shelved off towards the east, and the white salt surface of the lake shone from this side like new fallen snow. The lake is of the form of a long ellipse, and its circumference may be about 30 miles. It is surrounded on three sides by a row of hills, the interior of which, towards the lake, is exposed by the fall of the earth, and consists of strata of clay of different colours.

The water of the lake, which in no season of the year, and in no place, exceeds a yard in depth, was now almost entirely evaporated. The whole superficies of the lake consisted of one mass of the most beautiful and pure crystals of sea salt, rivalling the snow in whiteness, without a perceptible mixture of glauber salt, and, at some depth, gradually passed into a mass not unlike rock salt.

In some places, springs from the bottom of the lake had worked their way through the solid mass to the surface, forming perpendicular openings of considerable depth, so that the long pikes of the Cossacks could not reach the bottom. The quantity of the salt, thus wonderfully prepared by nature, is so great, that it might, perhaps, supply all Europe, if the geographical situation of the lake were favourable to it. As a new layer of salt is produced every year on the surface, like the annual growth of trees, there would be no fear that this repository would ever be exhausted.

It was, indeed, part of the author's plan to make the tour of the whole lake, and thus obtain a complete knowledge of its situation, and the peculiar productions of its vicinity; but the commanding officer of his escort assured him that this could not be done without exposing

themselves to the danger of an attack from the Kirghis. He, therefore, contented himself with exploring half the right side of the lake with a small escort, sending his companion Hermann to do the same on the left bank, which is the most difficult of access.

Even Pallas says, that he had obtained from the brine a number of insects in good preservation; Dr. Tauscher also enriched his collections from the same source, with many rare and beautiful kinds of Beetle; for ex. *Buprestis inderiensis, tartarica; Carabus halophilus, nob.; Calos inderiense, Lix.; canaliculatus, tetragrammus, Calandra picea, Pall.* Our travellers did not find, in these parts, the rare and dangerous venomous spider of southern Russia, the *Solpuga Arachnoides, Herbst, Pall.*; which Pallas says he found swimming uninjured in the salt waters. It is remarkable that he found in the brine, in very great numbers, several species of insects, which he very seldom found in the steppe itself. This was the case, for instance, with the *Calandra picea, Pall.*, which he saw alive, by thousands, in the salt water. Among the few kinds which he caught in the desert, the very scarce *My. ocellata, Pall.* gave him much pleasure, though he found only a single specimen.

His collection of plants was richer and more

important. The principal, besides those above named, were, the *Leontice incerta, Pall.*; *Hedysarum cornata, aff.*; *Pallasii Caspia, n. sp.*; *Molluccella tuberosa, Astrag. Pallasii, Pall. n. sp.*; *Lycium Europæum*; *Nitraria Schoberi*; *Zygophyll. Jabago*, &c. The saline plants were not advanced enough for him to make any remark upon them. The origin of the lake may be explained in a plausible manner, from its situation and the nature of its environs. The plateau called the Inder Mountain, elevated above the river and the surrounding steppe, is from two to three hundred versts in circumference, and is traversed in the middle by the river Ural. The soil, particularly that part of the plateau beyond the river, consists of rock salt, which is covered with a stone resembling alabaster.

The lake owes its origin to subterraneous springs, which penetrated through the solid mass of rock salt, and found a vent in the funnel-shaped hollow of the rock. The water proceeding from the melting of the snow in spring, which collects in the deeper part of the lake, perhaps also contributes.

Here, too, the pretty general law of nature is confirmed, according to which alabaster or gypsum is usually found near masses of salt. This, as here, is the case at Ilesk, near Orenburg;

in the rock salt mountains of Arsagar and Tschaptschatschi; in the Volga and Ural steppe; and in the rock salt works at Wieliczka in Poland. As we have already stated, it was Dr. Tauscher's intention to spend three days in examining the lake and its environs: circumstances induced him to shorten this period. The commanding officer reported to him that he had been informed by Kirghis spies, who were of the party of the Russians, that a troop of 400 Kirghis had assembled a few leagues distant, and threatened the company with an attack. In the second night, the fore-posts stationed round the camp were, in fact, disturbed by a party of Kirghis, who, however, departed when they found them resolute.

He was by no means disposed to engage, without need, in contests with these marauders: besides, he had entirely attained the object he had proposed; he therefore judged it best to return to the opposite bank, and, early on the morning of the third day, surrounded by his escort, carried his resolution into effect. As they approached the watering place, half way on the road, where they halted when they came, the author saw a number of people, of strange appearance, encamped near it. They were surprised at this, because, at their previous visit,

they had not seen a human being. On enquiry, Dr. Tauscher learnt that a Kirghis sultan, or nobleman, was about to occupy with his troops the inclosed market-place at Orenburg. The sultan, on his side, had enquired of our author's escort who he was; and, on being informed, amicably offered him his hand, and invited him, in the Tartar language, which his companion interpreted, to pass the night in his tent. Notwithstanding our author's great desire to accept this proposal, he judged it best to return, without delay, to the fort on the other bank, in order to dry the plants which he had collected.

He continued his route to the opposite bank, but was followed by the court chaplain of the Kirghis sultan, who offered to remain as a hostage in the fort, till Dr. Tauscher should have arrived on the other side of the river. For the reasons above mentioned, the Doctor sent him also back; and learnt, in the sequel, how fortunate it was that he did so. In the same night that the Kirghis chief hospitably offered him his tent, he was attacked by an hostile tribe of his own nation, and robbed of all his herds of horses, camels, and sheep. Thus, the author, in all probability, escaped the misfortune of being carried as a slave into the interior of Asia, to Chiva or Bucharia.

THE ETERNAL FIRE

ON THE

BANKS OF THE CASPIAN SEA.

THIS fire is in the peninsula of Apscheron, 20 versts from Baku, and is justly called one of the wonders of southern Russia. I have visited this spot. It is a burning desert, from the surface of which subterraneous flames here and there issue, which are occasioned by the exhalations of the naphtha. Though this fire may not be eternal, yet it is extremely old, for there are traditions of the origin of similar phenomena* in other parts; for instance, in the Ural, on the river Mangischlak, in the village of Sulp-Aul (*v.* Pallas) and that which I have seen in Wallachia, on the little river Slanika, near the village of Lapatar, on Mount Klaschna. But the origin of the fire

* They originated, at no very distant period, by the lightning having rent the upper hard layer of the mountain, which made an issue for the inflammable vapours, and, at the same time, caused the flames to arise.

in the neighbourhood of Baku is buried in th obscurity of the remotest antiquity.

The first appearance of this fire, in an ag when the phenomena of nature were so litt known and explored, might appear supernatura It is well known that Media was the seat Zoroaster's doctrine, and the introduction of tho mysterious receptacles of the eternal fire, whic the Mahometans every where destroyed. On the miraculous flame of Baku arrested the blin fury of the Mahometans. The temple cons crated to fire is still preserved by the remna of the ancient Parsees, or fire-worshippers, wh though scattered over the immense tracts Persia and India, come hither to perform th prayers imposed on them by their vows. Th temple, however, is no beautiful specimen architecture, but a simple stone square, in th centre of which stands the altar, from whic issues the eternal fire. The flat roof is supporte on four columns, from which a constant fire, co ducted by tubes, likewise ascends. On the roo above the altar, is a little belfry.

On dark nights this temple is descried even a great distance, and is the more interesting an majestic in the eyes of the traveller, as the bri liant flame does not resemble Vulcan's destruc

tive fire, but is like some mysterious phenomenon awakening sublime recollections of antiquity.

Within the wall which surrounds the temple, there are some stone houses, and a small garden, the residences of eight Parsee monks.* During the time of worship, they strike the bell once, generally on their entrance into the temple, and then prostrate themselves before the altar. After remaining for a pretty considerable time in this position, they arise, strike the bell once more, and then finish their prayers. They give the fire the firstlings of every sort of food. They eat no meat, and live entirely on vegetables. Their particular affection to animals is probably the cause of it; the guardians of the Holy Fire keep a great number of dogs, which they treat as friends and companions.

It is evident that they prefer their religion to all others, and consider themselves as purer than other men, because they are favoured with the

* The Europeans call them, as well as all other fire-worshippers, Guebers; which seems to be a corruption of the Persian word Giaur, by which they designate all those who profess a different religion. They call the Russians, Sare-Giaur, or Sare-Guebr, *i. e.* light brown idolators; probably because they observe fewer persons with black hair among them, than among the people of Asia.

purest notions of the divinity. In conversing with persons of a different religion, they protect themselves by certain prayers, which they repeat in an under voice. They seemed much displeased when my companions were going to dress their dinner at the same fire as theirs. To satisfy them, I had the kettle removed to another part. When they carried water near us, they always cried out, Brama, Brama, Brama, doubtless to counteract our influence upon it. Perhaps they have a particular respect for water; at least, in remote antiquity, it was considered, by many of the followers of Zoroaster, as a divinity.

The atmosphere in the temple, and in the surrounding court-yard, is very warm, on which account the monks wear a very light clothing.

It is reported that the monks, in former times, frequently made singular vows; for instance, to remain for several years in a constrained attitude, with their arms raised, or holding up one foot, &c. This, indeed, has ceased; but they still endeavour, as they used to do, to prevent the women from approaching the sacred fire; probably, that their presence may not divert their attention.

In every thing that surrounds them, these monks are very neat and cleanly. They have no superfluity, but poverty is unknown among them. Their cells are likewise lighted by the subter-

raneous fire; which is easily extinguished by covering the vent through which the gas issues. The verdure of the garden on the other side of the court-yard of the temple, and the delightful shade of the trees, afford these hermits a refreshing coolness. If superstition finds, in the evanescent flame, an object of adoration, no inconsiderable advantage is derived from the naphtha, which is so common here, and in the neighbourhood, and yields to the crown an annual revenue of 200,000 rubles.

John Richards

RUSSIAN DISCOVERIES.

CAPTAIN-LIEUTENANT MURAWJEW, governor of the colonies of the Russian American Company, in conformity to the orders of the directors, sent, in the year 1821, two vessels, the Golownin brig, and the Baranow cutter, to complete the discoveries already made by the expedition sent by land to the north of the colonies, in the years 1818, 1819, and 1820. Both the abovementioned ships left the harbour of New Archangel in May 1821. The first was commanded by Lieutenant Cromtschenko, to whom the whole direction of the expedition was entrusted; the second by Mr. Etolin. Their joint undertakings consisted in viewing the island of Hagemeister, and the strait of the same name, between that island, and the continent of America, and in the survey of the Bay of Good News. On their departure from this bay, the two ships separated. Lieutenant Cromtschenko went to the north, and saw first the coast of America; which he could not accurately examine, on account of the unfavourable state of the weather. Profiting by the accounts

which he had received from those who had taken part in the land expedition, he discovered the island of Nuniwak, but was prevented by several circumstances from examining it. This island, situated 59° 54′ 57″ north latitude, and 193° 17′ 2″ west longitude, is the same which was discovered by Captain Wassiljew, commanding the government expedition, the same summer, a short time before it was discovered by Mr. Cromtschenko; who was not informed by him of this discovery, till after he had himself, in some degree, examined it, and convinced himself that it was the very island concerning which some accounts had been obtained by the land expedition.

From Nuniwak Mr. Cromtschenko went to Norton Sound, where he minutely surveyed the Bay of Tatschik, and also its communication, by means of a great river, with another large reservoir; which, however, he could not survey, because the season was too far advanced. Returning from this place, he saw, for the second time, the island of Nuniwak, in different places, perceived upon it mountains of a middling height, but observed neither woods nor shrubs. Notwithstanding the barrenness of the coast, the island was inhabited. With respect to Mr. Etolin, he had sailed, before Captain Cromtschenko, into the

river Nushagi, and had examined its mouth. After parting with the Golowniw, he had, after conquering many great difficulties, sailed into the river Kuskokwim, followed its course to a considerable distance, and had much intercourse with the inhabitants. After he left this river, under the same difficulties he met with on entering it, he directed his course to Nuniwak Island, without having received any account of it, either from Cromtschenko or Wassiljew, who had discovered it a short time before; but depending only on the information collected during the land expedition, and that which he had himself obtained from the natives on the river Kuskokwim.

He soon approached this island, and in a short time after, with a clear sky, discovered the continent of America; he wished to cross the strait lying between them, but contrary winds prevented him. The high promontory, which he observed on the continent of America, he called Cape Vancouver, and left this place with the intention of sailing round the island of Nuniwak, to reach the promontory on the other side. On his voyage, on the south side of Nuniwak, he saw the coast and various promontories, which he could not venture to approach on account of the bad weather, and therefore repaired earlier to Norton Sound. On his return from this sound, he saw

several coasts, which appeared to him like islands. One of the capes of those coasts he called Cape Count Rumjanzow. Continuing his voyage along these coasts, he reached Cape Vancouver on the other side, and again descried the heights of Nuniwak. He now sailed along the north side of this island, where he had some intercourse with the natives, who are of the same tribe as the Aleutians. He hung round the neck of one of their elders, whom they much respected, a silver medal, with the inscription, "*Allied Russia,*" and made him various other presents, with which he seemed much pleased.

From this place Etolin wished to sail to Cape Vancouver, but want of wood and water obliged him to return.

Though this expedition did not succeed in accurately examining all the coasts which were seen by it, the new information collected by it gives us hopes, that the time is not remote, when it may be possible to have a just idea of the north-west coast of America, and the islands lying near it.

JOURNEY

TO THE OASIS OF SIWAH.

CHAPTER I.

NARRATIVE OF THE JOURNIES OF MESSRS. CAILLIAUD AND DROVETTI.

§ 1. *Mr. Cailliaud's Journey.*

It was on the 10th of December, 1819, that Mr. Frederic Cailliaud, of Nantes, accompanied by Mr. Letorzec, of the French navy, arrived in the town of Siwah, after a fatiguing journey of 18 days across the deserts situated to the west of Egypt. He had set out from the province of Fayoum, with a small caravan, composed of seven camels, under the guidance of an Arab sheik, of the name of Gouroum, (called Groumar by Belzoni, whom he accompanied to the little Oasis), and of Yousef, an inhabitant of Siwah, who by a fortunate chance happened to be at Medynet-el-Fayoum, and was qualified to serve both as guide and interpreter. The language of the country is equally unknown to the Arabs

and Egyptians; but the Arabic is generally spoken at Siwah, and employed in business. The travellers were provided with firmans from Mahomet Ali Pacha, viceroy of Egypt.

As soon as the tents were pitched before the town, the principal chiefs of the country went to the divan, followed by a numerous crowd, being alarmed at the sight of strangers. We know, from the accounts of Browne and Hornemann, to what a degree the Siwahans are suspicious of travellers. Mr. Cailliaud was immediately sent for, with Yousef, and being introduced in the assembly, placed among the sheiks; he presented the firman from the viceroy to sheik Ali, one of the principal, and who had been educated at Cairo. The fame of this prince, which had long since penetrated to this remote country, made the inhabitants dread the power of his arms; this was the first opportunity which had presented itself, for ten years, either to pay deference to him, or to brave his authority.

Ali, not understanding the contents of the firman, expressed an intention of sending it to Cairo, to which Mr. Cailliaud readily consented; but on consideration, the sheiks gave it up themselves, and an animated discussion took place among them. After long debates, continued through two sittings, the divan decided that the

travellers, accompanied by some persons whom it should choose, should be at liberty to visit the antiquities of the country, except those of the island of Arachyeh; a mysterious place, which no stranger is allowed to approach. "We will perish," said the chiefs, "rather than permit you to penetrate into that island."

On the evening of the travellers' arrival, it was announced in the town, and in the whole district; and at the same time a notice was published, prohibiting every inhabitant from molesting them or asking them for money, on penalty of a fine of a hundred and sixty measures of dates, (about two hundred weight). A much heavier fine was imposed upon any person who should use insulting language to them.

While they showed themselves exacting and suspicious towards the Europeans, the Siwahans were eager to pay attention to Ismael Abouchanab, a musselman, interpreter to the little caravan. "We will receive you," said they, "as our friend, and as the envoy of Mahomet Ali, the great sultan, the conqueror of the Wahabis. Here is rice and a sheep for you, but not for the strangers." On the 11th of December, they conducted Ismael to the mosque: he took care to perform all the external acts of devotion which might please zealous, or even fanatic

Mahometans. As for Yousef, who was a native of Siwah, they forbade him to have any communication with the foreigners. This was depriving them of a great advantage, and accordingly Ismael hastened to the town the next day to claim him. The people this time opposed his entrance, and the divan again assembled. A great dispute arose in the council, which terminated in their acceding to Mr. Caillaud's wishes, who, without losing a moment, set out for the Catacombs of Gebel Mouta, a mountain lying near, and to the north-east of Siwah: he made drawings of them and notes. He was obliged to submit to the same formalities, to visit the country to the west; and after having obtained permission, and the necessary beasts, he went to observe the antiquities of that quarter.

He had still to visit those of Omm Beydah; these are the principal remains of the monuments of the Oasis. The sheiks were very irresolute about granting this favour; the inhabitants were especially influenced by the fear that the stranger might dry up, by some charm, the abundant spring that flows near Omm Beydah. They continually spoke of the visit to the isle of Arachyeh, vowing they would rather die than suffer him to go to that island. "According to their account, it contains talismans and treasures, which might be

seized by the assistance of perfumes and malignant influences; it possesses also the sword of the prophet: woe to whoever should attempt to touch it!" These tales, and all such puerilities, expose the weakness of mind, the superstition and ignorance of most of the orientals; and sufficiently explain the difficulties which a European experiences among these fanatic people, and the efforts which the most trifling discovery costs him.

Mr. Cailliaud was obliged to obtain the consent of the sheiks every time he came out of his tent; he was compelled likewise to have somebody with him. Happily too, cupidity, the faithful companion of ignorance, came to his assistance; he gained the inhabitants by money: now and then he was able to write and make sketches, to visit the neighbouring mountains, and also the environs of Siwah. Once, however, he was perceived, with his companion, walking round a hamlet to observe its external appearance; they immediately apprised the divan of it, saying he was going to dry up the springs: he then became suspected; and when, on the 17th of the same month, the assembly met again, to deliberate on the excursion to Omm Beydah, the request was *refused because* it was a forbidden place. They *did more,* they restricted the space which he was

allowed to visit, and forbade him to walk in the groves of date trees, situated at some distance. Constantly followed and surrounded, he could not make any more drawings, never being a moment alone; he was forced to give up the topographical plan of Siwah which he had begun, and to think no more of the journey to the mysterious island. He could only write at night, when in his tent. When he complained of so many vexations, the sheiks told him, that, in comparision with another Christian who had visited the country, he was treated with much attention; this Christian was a French officer of engineers, of the name of Boutin, who was afterwards assassinated by the Arabs.

On the 18th of December, Mr. Cailliaud conceived the idea of sending Yousef to the temple of Omm Beydah, to take an impression in wax of the inscriptions which he said were over the door; but this attempt likewise failed. Yousef was perceived; the sheiks were informed, and he was again enjoined not to have any more communication with the travellers: a fine was denounced against whoever should speak to them; lastly, the people of the house near their tent were ordered to remove, that they might have no intercourse with the Europeans, and *they were* therefore completely insulated.

Mr. Cailliaud hoped that sheik Gouroum might find means to conduct him to the lake of Arachyeh; but the road, covered with plantations, and a numerous population, the position and the distance of the place, every thing opposed this plan. It was impossible to escape the vigilance of the inhabitants and their insults. Some Arabs of Gharb, who had been for a short time at Siwah, could have conducted him to Augelah, an oasis situated seven days' journey to the west; but these people had been entirely pillaged by Bedouin horsemen. Another party of Arabian banditti had appeared the day before, at a short distance from Siwah, and Mr. Cailliaud ran, at least, the risk of losing his instruments; he was obliged to renounce also this excursion. These events, however, determined the inhabitants of the Oasis to send in pursuit of the Bedouins.

The sheiks again assembled on the 19th of December; the application of Mr. Cailliaud was once more rejected. He tried to gain the sheiks by promising presents to each, separately; all refused, unknown to each other. He then resolved to offer his present publicly in full council. While the sheiks, assembled in the divan, mutually accused each other of having shamefully accepted gifts of a Christian, Ismael, the

interpreter, entered: he laid down, in his own name, the milayeh of Cairo, the tarbouches, the yellow morocco slippers, and the shoes of Moghrabin, intended for the sheiks, excusing the little value of these articles; begging that they might be accepted to do him pleasure. Being ignorant that they belonged to a Christian, the sheiks received them, delivered them to the oldest men in the town to divide them, and in return gave Ismael two hundred weight of dates; they then repeatedly expressed the suspicion that the Pacha of Egypt had sent this Frank to observe the country, and make himself acquainted with its resources. This distrust was but too well justified in the sequel.

Sheik Ali, however, more sociable than the others, promised the travellers his protection; he even offered to accompany them, during the night, to the ruins of Omm Beydah, if the inhabitants continued to make objections. The following day the request was again evaded, on account of the absence of two chiefs; at night-fall Ali came in person, to bring the permission which he so much desired. At the same moment a troop of Arabs, having 300 camels, was announced, who had come from Barqah and Bengazy in 16 days. Sheik Gouroum, who was an enemy to the sheiks of the caravan, immediately begged Mr. Cailli-

and to take advantage of that which was setting out for Alexandria, in order thus to withdraw in safety to the distance of a day's journey; assuring him that blood had been spilt between him and the Arabs of Gharb; that he could not, without danger, set out alone with the traveller and his people; and that it might even be feared that the Siwahans would follow them into the desert to plunder them. Sheik Ali joined his prayers to those of Gouroum. Prudence showed the necessity of departing without hesitation.

Our traveller hastened to avail himself of the permission of the sheiks, and set out on the 22nd for Omm Beydah, under the escort of four men, who were sent with him. After having traversed roads, bordered with palm trees, and watered by canals, he arrived at Omm Beydah, where he visited, and measured, a fine temple in the Egyptian style. He had scarcely returned, when the caravan was preparing to depart; they were loading the camels, and sheik Gouroum, abandoning all that belonged to him, was ready to accompany him. This was the last moment, which they were obliged to take advantage of, to observe the longitude of the town. The sky, covered with clouds, rendered the operation rather difficult: Messrs. Cailliaud and Letorzec, however, succeeded in taking a series of several

distances. They had already found means to obtain the latitude, by observing the meridian heights of the sun from behind a cloth which entirely concealed them from view.

The caravan of Bengazy had brought, besides a great quantity of salt mutton dried in the sun, shawls of coarse wool, bracelets, necklaces, and ear-rings of silver. The same day, at half-past four in the afternoon, the travellers set out to join the caravan, which had taken the road to Alexandria. They reached it, after travelling four hours, at El Baqarah, to the north, and near the mountain; whence they proceeded towards the little Oasis, unknown to the people of Siwah. At the moment of departure, the sheiks gave them a letter for the bey of Fayoum, in which they said that they could refuse nothing to Mahomet Ali Pacha.

§ 2. *Journey of Mr. Drovetti.*

Two months after this journey, in February, 1820, Mahomet Ali Pacha resolved to send an expedition to Siwah. He had long intended to have this Oasis visited; Mr. Drovetti had urged him to have the ruins which it contained inspected, and the pacha had for many years determined to send Mr. Drovetti himself there, with a strong

detachment of the tribe of the Hamaymes, who inhabit the frontiers of the province of Manfalout, and are renowned for their bravery among the Arabs of the Lybian desert. But the ambition of Hassan bey, governor of the province of Bahyreh, who had already subdued the little Oasis, offered to place that of Siwah under the power of the viceroy, and furnished the consul of France with a much more favourable opportunity, which he immediately embraced. Provided with the orders and recommendations of the pacha, he set out, in the month of March, for the camp of Hassan, which was at that time infected with the plague. This bey set out with from 1,500 to 2,000 men, and some field artillery. In making this display of force, the viceroy wished to render the Siwahans, who had hitherto been independent of every foreign power, tributary to Egypt.

Mr. Drovetti was accompanied by two draughtsmen, Mr. Linan of the French navy, and Mr. Ricci, an Italian. He had also obtained permission of the pacha for Mr. Frediani to join the expedition.

They set out from Terrâneh, proceeding to the south point of the lake Mareotis; from Zâouyeh, they went to the south-east, to Hammâmeh, one of the points of the road which the pilgrims take as they come from Tripoli to Cairo, on their way

to Mecca; thence they went to Lebbak, to the south, on the road which Hornemann took on coming from Cairo to Moqarrah. To reach this place, which, by the shortest road, is only 40 leagues from the Nile, the expedition had travelled about 57 leagues.

From Lebbak they repaired to Garrah, by a road over the mountains, where there are several small plains; the distance is about 45 leagues. At one place there is water fit to drink. At length, passing Zeytoun, where there are some ruins, they reached the town of Siwah, after having travelled, in all, about 130 leagues from Terrâneh, without reckoning frequent deviations from the direct road.

Though struck by the sight of the troops, and seeing their apprehensions so soon justified, the Siwahans prepared to make resistance. After a brave but fruitless opposition, for three hours, against the Egyptian artillery, they submitted to the conquerors. Yet, still faithful to their customs and superstitious ideas, they obstinately refused to admit them into the town. To overcome this resistance, the bey had need of all his firmness and his zeal to execute the orders of the viceroy. He threatened totally to destroy the town: they yielded; the soldiers, and even the Franks, entered Siwah.

Thus, thanks to the energy of Hassan bey, our travellers were enabled to visit the inside of Gharmy, which, hitherto, no European had seen, and they were able to traverse several vallies in the neighbourhood, take plans, to make sketches of the country, and collect measures and exact copies of ancient monuments. They had still to see the lake and isle of Arachyeh: the bey took hostages, who were to answer for the lives of the travellers: the latter were conducted to this mysterious and inaccessible spot, which is distant about 25 leagues from Siwah. Lastly, Mr. Drovetti was able to trace an itinerary of his route. These, with the valuable notes of Mr. Cailliaud, and the designs he has brought with him, are the principal elements of the description which is before the reader.

CHAPTER II.

DESCRIPTION OF THE COUNTRY.

§ 1. *The Oasis of Siwah.*

We are here to consider the Oasis of Siwah, entirely with regard to its present situation, and without any reference to former times. By ac-

quiring a due knowledge of what it now is, by correctly determining, as far as our information will allow, the nature of the soil, its productions, the manners of its inhabitants, its laws, commerce and population, we shall obtain means to discover what it may have been in antiquity. In fact, as the first of modern geographers has said, it is absolutely necessary that our present notions of the country should accompany the study of ancient geography, which, without this aid, is indeterminate and obscure. The soil, climate, and productions do not change, or but very little; nearly the same may be said of the characters, manners, and customs, founded on the nature of the country; institutions themselves do not entirely perish, and their fragments, like those of monuments, assist us in discovering what they formerly were.

The capital of the Oasis is situated in 29° 12′ 20″ north latitude, and about 24° longitude east of Paris. The extent of this district is not so easily determined as its geographical situation. The cultivated part is variable, and may be estimated differently in different years. The surface may also be valued by the extent of soil which is susceptible of being watered. Lastly, the calculation of the extent is sometimes made to include the whole bason, the bottom of which

is occupied by the fertile land, and even some vallies that are to the east, such as Zeytoun: hence the very different measures given by the Arabs and by travellers. Thus, Browne gives to the Oasis the length of six geographical miles only, and a breadth of four miles and a half; whereas, according to Hornemann, it is 50 miles in circumference. Other statements, communicated to Mr. Ripault, at Alexandria, by inhabitants of Siwah, make the extent of fertile territory six or eight leagues.

According to the map sketched by Mr. Drovetti, the total extent appears to comprise all the space between the town and two lakes, situated to the north-east and north-west, which forms an irregular quadrilateral figure, about five leagues by four. But the fertile part, according to Mr. Cailliaud, does not exceed two leagues from east to west, by a league and a quarter in breadth. According to the same traveller, the soil is the richest to the east of the town, where it is entirely covered with palm and fruit trees.

On the same side are two villages, called Menchyeh and Gharmy (or Agharmy): the latter is on the top of a very steep and high rock. To the north, there is a mountain, in which are many quarries and catacombs, called Gebel Moutä; to the east, another similar mountain, called Drär

Abou-beryk (or Abou-ebryk); and lastly, between Gharmey and Menchyeh, the remains of a great temple: these ruins are known among the inhabitants by the name of Omm Beydah.

The soil of the valley is in general a sandy clay; but all the environs are covered with salt; the water of the lakes is brackish. Rock salt abounds in the country; it is sometimes perfectly white, and is found in large blocks, which are used for building materials. The ground is also mixed with crystallized gypsum: the rock too is full of petrified shells. In general the constitution of the soil pretty much resembles that of Egypt, in the environs of Memphis and Fayoum. On the surface of the ground there is found salt mixed with sand; and the foundation walls, as well as the enclosures of branches of date tree, though by no means thick, form solid fences, because the rain, or the humidity of the night, melts the salt, and makes the blocks adhere together.

It is a remarkable fact, that notwithstanding this abundance of salt in the whole territory, the springs are perfectly sweet, and the sweet water often runs close to the salt water. This quality of the soil, far from injuring the vegetation, seems to promote it. No country can be more fertile; the palm, olive, and pomegranate trees are loaded with the finest fruit.

Even in the middle of the salt lake, to the west of Siwah, there are two little islands on which grow date and other fruit trees; on the other side are very fine plantations of olives, to which you come by a causeway made across the lake.

The inhabitants affirm that there was formerly a mine of sulphur to the west of Siwah. As the working of this mine was an object of jealousy, and gave rise to sanguinary contests, it was filled up. The existence of sulphur, of ancient warm baths, and the earthquakes which occur from time to time, are circumstances which deserve attention; without doubt, they are connected with each other: the mineral springs, which are very numerous in the environs, are a confirmation of this remark.

The town itself is situated on a rock of testaceous limestone; the soil of the environs is similar; it is traversed by layers of salt.

In winter, the wind blows pretty regularly from the north; the rains are frequent in the months of January and February. Every year, in the summer, the inhabitants are subject to a kind of inflammatory fever, caused perhaps by the stagnant waters, and by the great quantity of fresh dates which they eat at this season of the year.

The principal trees, in the Oasis of Siwah, are

the palm, olive, pomegranate, apricot, vine, fig, plum and apple tree. According to Browne, the banian must be added. Dates are an extensive article of commerce. They dry the apricots, grapes, figs and plums; the former are exported; they are used in ragouts, and are boiled in sugar. The fields produce parsnips, greens, and a little corn.

Olives grow in abundance; they are large, and of an excellent quality, and yield very fine oil. The inhabitants are very careful of their palms; and are accustomed to fumigate them with thistles and thorny herbs. The dates are not all of the same species; there are five, one of which has no kernel: their names are as follows: gazaly, freyeh, sâyd, el-kâyby, and ouaedy. The first, called sultanas, are the most delicate, and far superior to all those eaten in Egypt; they are accordingly in great request on the banks of the Nile: the kernel is short and large. The ouaedy date serves as food for the camels, asses, and other animals. The date sâyd is placed, when fresh gathered, in little long baskets, and pressed close, so as to form a paste.

The animals which the Siwahans use for food are the sheep, the ox, the goat, the ass, the camel, and the buffalo; they also have chickens. The asses are fine and strong, but the cows lean and

red-haired; the sheep are very large, they have broad flat tails; the camels are but few in number.

It is almost superfluous to add, that at Siwah, as in all cities in the east, no tables of mortality are kept, and no account is taken of the population; it is therefore very difficult to know the number of the inhabitants of the Oasis. By a rough calculation, it is estimated at 5000, at the most; of whom the town contains 2000. Hornemann says that it is able to furnish 1,500 warriors, which, according to Major Rennell, would suppose six or seven thousand inhabitants. Notwithstanding these differences, which are easily explained, we know enough to form a pretty correct idea of the population of this country. It seems evident that it never could have been very considerable.

According to the general opinion, the Mahometans who live remote from the great towns, are not strict observers of their religion: but this is not the case with the inhabitants of Siwah; among them it is practised in all its rigour. Any one who fails to attend prayers is subject to a fine, which serves for the repair of the mosques. However, the manufacture of brandy is tolerated, provided it is done out of the town. Circumcision is scrupulously observed among them, but

not exclusion among the women. The Koran is at once their civil and religious code.

The government is administered by a kind of divan, which, according to Caillaud, consists of 22 sheiks (Messrs. Drovetti and Ripault say only 12), who are appointed by election, which always falls upon the eldest. Six of these sheiks are changed every year; but after the cessation of their functions, they are consulted in all affairs.

The sheiks deliberate in the presence of the elders and all the people, without whose knowledge nothing is done; all transactions are public, and every person who enjoys some kind of consideration, is allowed openly to express his opinion. The Cady, to whom the administration of justice is confided, is sent for from Cairo.

The law of the country is not the same with regard to him who has been guilty of murder, and him who has committed theft; the latter is tried by the sheiks; but the other can neither be tried nor punished by them. It is their duty to seek after the murderer; when he is found, he is delivered up to the relatives of the murdered person, who, as caprice dictates, kill him, or set him at liberty, or make him endure such torments as they are pleased to inflict. Whoever is condemned to pay a fine, and is unable to pay it, is conducted to a great distance from the town,

where he is thrown upon the ground with his face downwards, and struck with leather straps across the naked shoulders: while one man strikes him, another pours brine upon his back.

Theft, or any other misdemeanour, is liable to a fine, which, according to the custom of the country, is paid in measures of dates, as we have already had occasion to notice, and its amount is proportioned to the nature of the offence. The fines are applied to the service of the mosques, or to the relief of strangers who are in need of it.

A law obliges every individual, as soon as he has attained the age of manhood, to go out of the city. The same is the case with every one who becomes a widower; he must immediately quit his habitation, and reside in a village which is at the foot of the city. When he has married again he returns to his house. The village contains only widowers, and unmarried young men: they have, however, a right to go into the town in broad day-light; but as soon as night comes they must retire, under penalty of a fine.

The predominant character of the Siwahans is suspicion and mistrust; their disposition is gloomy, unsociable and intractable: they are importunate, obstinate, and jealous to excess. A brother does not visit his sister-in-law during the absence of her husband. The same is the

case with one who visits a friend, he never enters the house if he is from home. To stop before the house of a neighbour excites suspicion.

Their heated imagination renders them superstitious. The Arabs, on the borders of the Nile, fear them as people addicted to sorcery. Notwithstanding their suspicious character, they are hospitable. Strangers may go to the public place where dates are sold, and freely eat as many as they choose, without paying for them. Skins full of fresh water are also set out every day, especially intended for their use, which is not done for the natives themselves. Lastly, they have, in the same place, a particular spot, which is reserved for them alone. Perhaps this kind reception, which the Siwahans give them, is not wholly disinterested. If they are generous to strangers; if they feed their camels for nothing; if they even give to the Arabs fruits and vegetables; it is, probably, to induce the caravans to visit them annually to purchase the productions of their country.

A custom, equally barbarous and singular, prevails among them, the object of which doubtless is to encourage a warlike spirit. When a serious difference arises between two powerful families, a sheik makes the disputants descend from the town by beat of drum, attended by their

relations and friends. As soon as they are in the plain the adverse parties separate; the women post themselves behind them, provided with bags full of stones, to throw at those who shall attempt to run away. Before they proceed to action, the combatants take copious draughts of plain wine. They first advance towards each other in small bodies, by turns, and each fires a musket close at hand; the rule is, that each person is to fire only once: when this has been done the combat ceases, whatever may be the number of killed or wounded. The sheik, who has presided, beats the drum as a signal for retreat, upon which the adverse parties approach and embrace each other. These frequent and sanguinary actions, which may be compared with our duels, must encourage a warlike disposition, necessary in this insulated place, which otherwise would continually be a prey to the Arabs. In fact, this was confessed to our travellers by a sheik: "Without these little wars," said he, "our people would not have that bravery and resolution, which have enabled them for so many years to resist the incursions of the Bedouins."

We will now mention some other customs of the country. The men alone attend the burial of their relations and friends; the women are not allowed to be present, as is the custom among

the Musselmen. The women do not go out of the town of Siwah; the same restriction is imposed upon the girls, as soon as they have attained the age of nine or ten years. Sometimes, however, but very rarely, women in years are permitted to go out of the town. They marry very young, as in Egypt. The marriage ceremony is the same; the bride, covered with a thick veil, is led under a canopy, to the sound of musical instruments. The women do not dance as they do at Cairo; as for the men, they dance a kind of sauteuse, in the manner of the negroes, accompanied by the tambourine, the reed-flute, and the three-stringed violin.

The Siwahans are temperate and frugal. Every family breeds sheep, but they kill only once a year; the price of these animals is indeed high, for they sell at 50 or 60 Egyptian piasters. Their common food are dates, rice, leavened bread, dough fried in oil, and kous-kous, which is a dough made of wheaten flour, boiled in the steam of meat, seasoned with butter, to which are added hard eggs and chick pease. Not having cattle enough to be able to make butter in any quantity, they eat the milk curdled. They also eat several kinds of common meat, for instance, that of camels and goats; nay, they even eat the skins of these animals, as well as the flesh. The Siwa-

hans have also some domestic fowls; river shell-fish, which they call *bosué*, is another article of food. The pulse in use among them are beans, lentils (which come from Egypt), and a kind of pointed pease, of which they make bread.

They make date wine, which they call *lagoby*; the colour is red, and the taste sweet; this wine is heady, and does not keep: it is made just as the date begins to turn red. The Siwahans do not smoke; but they chew leaf tobacco, like the people of Provence.

The dress of the women consists of a blue robe and a milâyeh. They braid their hair, after the fashion of the women of Cairo, with much art, and entwine glass beads with it. They wear silver bracelets, and necklaces and ear-rings of the same metal; the latter are very large; and sometimes two are suspended from each ear. The men wear a white robe; a milâyeh, worn in the manner of a scarf; a tarbouch on the head, without a shawl or turban; and yellow leather shoes. Almost all the inhabitants are armed with a musket; some have, besides, a long sabre, like that of the Abâdeh Arabs, who reside in the deserts between the Red Sea and the Thebaïs.

The men have no other employment than agriculture and the trade in dates; they have no looms for linen as in Egypt; they do not spin,

nor make woollen stuffs. In a word, they would have no manufactures, if they did not make mats and some rude vessels; to which we must add that the women make baskets, both of straw and leaves, much resembling those of the Bereberes, but of finer and more finished workmanship.

The trade of Siwah is carried on by caravans, which come from the west; that is to say, Bengazy, Derna, Tripoli, and the west of Barbary; as well as from Bourgou, Fezzan, &c. and from the east, that is, Egypt, by way of Damanhour, Fayoum, and Alexandria; and also from the south, by the great and little Oasis. Five hundred loaded camels, at least, coming from Egypt, and a hundred from Gharb, or the west, arrive every year. From Barbary they bring corn, quilts, boots and shoes of yellow morocco, *Barnous* or Arabian mantles and tarbouchs, a kind of red bonnet or cap. Siwah receives sulphur from Fezzan. The caravans from Egypt bring wheat, lentils, beans, and other dried pulse, milâyehs, handkerchiefs, and blue and white linen. Those from Alexandria furnish them with corn, dried pulse, and also handkerchiefs, looking-glasses, leaf tobacco, and ordinary Venetian glass ware. The little Oasis supplies them with rice, which is inferior to that of Damietta and Lower Egypt.

In return for these various merchandizes, the

Siwahans give nothing but dates, of which they have great abundance, and also some oil, but in less quantity. They carry their dates themselves to Alexandria, and to the little Oasis, and bring back part of the goods we have just enumerated. The Egyptian piaster of forty paras is current among them, as well as the Spanish piaster. They make no use of weights and scales; all goods are sold by measure. When a butcher has killed an animal, he divides it into small lots, and sells them in proportion to the price of the whole animal; the case is the same with other articles.

We should now say something of the language spoken in the Oasis of Siwah. It is much to be regretted that our travellers have not brought to Europe a vocabulary of the usual words; it might have been compared with that which Hornemann formed, and which has given occasion to various learned researches. (Mr. Drovetti made a small collection of the words of the dialect spoken at Siwah, which, according to Mr. Marsden, is the same as the Berber, which he supposed to be a remnant of the ancient Punic language corrupted. Mr. Langles has made the same conjecture.)

§ 2. *The Town of Siwah.*

The external appearance of the town of Siwah, built on a large conical shaped rock, is striking but singular, as well as its internal arrangement. It resembles a kind of bee-hive, both by its form and the numerous population crowded in it. Opposite this hill, is another similar mountain; this place is called Beled el Koufir, or the Ancient Town, and contains quarries and catacombs. The town is divided into two parts, the first, towards the east, is inhabited by married people, women, and children; the second, towards the west, situated lower than the first, is occupied only by widowers and youths.

Nothing can be more strange than the manner in which Siwah is built. The houses and walls are for the most part of sea salt and natron or mineral soda. Most of the streets resemble staircases; they are crooked, covered over, and so dark, that you must either grope your way in them, or use a light; so that the inhabitants walk about, and pursue their occupations, at noon day, with a lamp in their hand.

The whole town, properly speaking, is only one building, all in one piece. Each house has several

stories: the upper communicate with the lower by galleries and chambers which cover the streets. The population, which is 2,000, or 2,500, is confined in a narrow space, which has caused it to be compared to an ant-hill. The height of the walls is from 10 to 20 yards. The number of stories visible is three or four, and is on the whole five or six. The external walls are inclined, and flanked by towers. The general form is almost a square; it is about 400 yards in circumference, and has from 12 to 15 gates. Its position and construction make it a kind of fortress easily to be defended. There are three wells within the walls; one of sweet, and two of brackish water: the first affords a sufficient supply for every purpose.

I have said that the town is built of salt, but this requires an explanation. The mountains in the vicinity contain large masses of salt; blocks of this substance are employed as materials in building the walls: sometimes this salt is mixed with sand, sometimes it is as white and pure as rock salt. They likewise use in building a gypseous earth, with which they cover the walls to preserve them. When this coating is injured, the rain or the dew melts the external surface of the blocks of salt, so that the walls are under-

mined, and would fall in time, if they did not take the precaution of applying a fresh coating of gypseous earth.

In the centre of the town, the streets are generally five feet broad, and about eleven feet high; but some of them are so low, that one must stoop to pass through them. The chambers receive light by small openings, 14 inches by 16½. Each has three. As for the rooms in the centre of the town, they are lighted by small openings made in the upper part. On every marriage, the father builds a lodgment for his son or daughter above his own, so that the town always grows higher and higher. The mosque is in the north of the town; it is built of stone, and supported on pillars of date tree.

According to the observations of Mr. Caillaud, the latitude, obtained by a series of meridian altitudes of the sun, is 29° 12′ 19″, 62, which is exactly the parallel of Benysoueyf, and its longitude is estimated at 23° 45′ 54″ east of Paris.

§ 3. *Antiquities of Omm Beydah.*

A league and a half from the town of Siwah, towards the north-east, are the ruins of a large temple, built in the Egyptian style, to which the natives give the name of Omm Beydah. There

in many places. This cause of destruction, added to so many others, has contributed to the disappearance of the greater part of the edifice; so that it is very difficult, if not impossible, to make a restoration of the whole.

However, if we follow with attention, on the topographical plan, the contours of the ruins, the direction of the heaps of rubbish, and fragments of the walls and enclosures, we shall obtain an idea of the general plan, and may compare it with those of the edifices of the Thebaïs. It may be considered as very probable, first, that the long chamber, still subsisting, was on the axis of the building, nearer to the entrance than to the back front, and that it was divided into two or three parts; secondly, that the stones heaped up to the south of that apartment corresponded with the sanctuary; thirdly, that the remains of columns belonged either to a portico, or a peristyle gallery, like those of the typhonium; lastly, that the piles of stones placed on several points of the ruins, are distributed in such a manner, as to make part of the sides of two rectangles, answering to the second and third enclosures.

It seems that the water of the springs, being introduced into the environs of the temple, has contributed to undermine its foundations. The last stones, seen towards the south, in the midst of

ponds, would indicate, if they have not been removed from their places, that the temple of Omm Beydah was still more extensive.

In an angle towards the east, behind the ruins of Omm Beydah, and in the middle of a grove of palm trees, near the village of Gharmy, there are the remains of several chambers, without sculpture. At the foot of the plateau there is a hollow, where a great quantity of water collects. The very ruinous state of the temple of Siwah, though less exposed than those of Egypt, must be attributed to several powerful causes; the annual rains, the north wind which prevails every winter, the proximity of salt lakes; lastly, the nature of the testaceous limestone of which it is built: this stone is mixed with layers of salt, and is liable to rapid decomposition.

It is the more to be regretted that the temple of Omm Beydah is nearly destroyed, because the existing decorations have the greatest resemblance, or more properly speaking, a perfect identity with the Egyptian monuments. The figures, scenes, and arrangement are entirely the same. Here is the god with the ram's head, such as is seen at Thebes and Latopolis, who here receives the homages of the priests. The ram is the figure that most frequently occurs among the ornaments.

The interior, and the ceiling of the apartment still standing, were richly adorned with hieroglyphic sculptures in relief, and painted. The figures of the gods and priests form long processions, occupying three rows, surmounted by a multitude of columns of hieroglyphics, painted blue or green.

The same style, and the same cast of countenance in the figures, is remarked here as in the monuments of the Thebaïs; it is the same with the costumes, head-dresses and sacrifices. The few hieroglyphic signs, which the draughtsmen were able to copy, are from the same source. Thus the same art and the same worship raised the great temples of Esne, and of the Oasis; the great divinity of both places was Osiris Criocephalus, the Jupiter Ammon of the Greeks; in this point of view, therefore, the names of Temple of Ammon, and Oasis of Ammon, are proper for this edifice, and the Oasis in which it is situated.

It is to be regretted that the artists who accompanied Mr. Drovetti, have copied so small a number of hieroglyphics, out of the multitude of those sculptured in columns on the sides of the walls; but, except two or three figures of animals, serving as masks to the Egyptian figures, the character of which they have left undetermined,

their drawings are sufficient to give a tolerably precise idea of the origin and nature of this interesting monument.

There are still some paintings to be seen on the ceiling, which is occupied by two rows of gigantic vultures, which have their wings extended, with columns of hieroglyphics, and stars, painted red, such as are seen on the central soffit in the Egyptian temples, and the ground of which was painted blue, if we may judge by the pieces of colour which still remain. The sculpture is in relief.

A sculpture of a different kind was observed by the French travellers, under the ruins of the entrance gate, and on two of the faces of a rectangular block is sculptured, in full relief, the figure of Typhon, or the evil genius, about five feet high; a similar block has been used in the bason of the mosque of Siwah: they were, without doubt, the pedestal of columns resembling the Typhonium of Edfou, a monument to which these ruins bear a resemblance, but on a larger scale.

Mr. Drovetti, who is well acquainted with the monuments of Egypt, does not consider the portion of the temple still standing as the great hall of the edifice, but merely as a corridor, which he infers from the analogy with the corridors

and avenues of the temples of Egypt. Neither does he believe these ruins to be the remains of a sanctuary, because it is close to the entrance-door, which is on the north, and because the figure of the divinity is turned to that side. "Besides, we could not," he says, "upon this supposition, explain the heap of ruins which extends to the south of the walls."

If we may believe the accounts which the inhabitants gave to Mr. Cailliaud, there is a subterraneous passage, by which the temple communicates with the neighbouring mountain; it is to be regretted that the subterraneous chamber was not found, which in this case must have been formed under the sanctuary, and was adapted for the pronouncing of oracles.

Near Omm Beydah there is a celebrated spring or fountain. I mentioned in the first chapter what prevented Mr. Cailliaud from visiting it. An ancient superstition is attached to this spring, and strangers are forbid to approach it. Some years before, they told him, a Christian had gone near it, and his presence caused it to dry up: fortunately, however, after his departure it again began to flow.

§ 4. *Environs of Siwah and Omm Beydah, on the north and east.*

The catacombs hollowed out in the mountain called Gebel Mouta, are the most interesting part in the environs of Omm Beydah. Though but a small portion of the catacombs, which served the ancient population, was visited, what we know is, however, sufficient to prove that the old inhabitants practised nearly the same rites of burial as the Egyptians; therefore, that they adored the same divinities, and built temples to them after the model of those of Thebes.

Gebel Mouta is an insulated hill, of a conical form, situated half a league to the north-east of Siwah, and to the north-west of Omm Beydah, from which you command a view of the whole country; its elevation is rather more than that of the hill on which Siwah is built. The rock is limestone, the layers of which are intermixed with fossil shells. A great number of small excavations, to receive dead bodies, have been made. These catacombs are not made with any care, and can by no means be compared with the magnificent subterraneous repositories of the city of Thebes. Some, however, are enriched with hieroglyphic paintings, executed on stucco. In several places there are still some traces of the

squares which served to design the figures. No tombs are met with, which have not been opened and violated. If the bodies were embalmed and wrapped in linen, how does it happen that neither linen nor bitumen are now to be met with? The fragments and bones are of a brown colour, but bear no positive indication of having been embalmed. At the foot of Gebel Mouta, on the west side, there is, in a hollow, a spring of excellent fresh water.

To the south-east of Siwah is another mountain full of quarries and hypogeums. The ruins of Omm Beydah are to the north-west of this point; from the summit there is a very extensive view, comprising the whole district of Siwah. According to Mr. Caillaud, it is called Dârr-Abouberique, (perhaps, Drâr-Abou-ebryk); it is composed of several conical eminences, and is limestone mixed with gypsum. Beds of fossil shells are found in abundance, and principally the shells known under the name of Buccinum, Pectines, Ostrea, Chama, &c.

This mountain served the ancient inhabitants as a quarry, whence they procured materials for building, particularly the great temple of Omm Beydah. Several of these excavations have been converted into catacombs, and adorned with pillars and columns. The first consists of an

apartment measuring about 17 feet by 19½, supported by six square pillars; the workmanship is indifferent, and has not been finished. The back part appears to have communicated with a subterraneous passage, which the sands have blocked up. Another catacomb, near the first, is entirely filled up. According to the inhabitants, it contains a subterraneous passage, which is connected with the ruins of Omm Beydah; some Greek characters are carelessly traced upon the rock.

A little higher up is a third hypogeum, of better workmanship: it consists of four apartments. The entrance hall is 20 feet by 19: it was ornamented with six columns, of which nothing remains but the capitals, which seem suspended to the ceiling. The cornice of the entrance gate, the towers, and the rest of the ornaments, are in the Egyptian style; but there are no hieroglyphics, sculptures, decorations, or inscriptions.

All these hypogeums, like those of Gebel Mouta, are too inconsiderable to be compared to those of the Thebaïs. It is the same with those of the mountain opposite to Siwah, on the east, called Gebel el Beled Kouffar, and other catacombs which are in the great chain of mountains to the north of Siwah.

The village of Gharmy (or Agharmy) is

mountains of Siwah. Beyond it, on a sandy plain, are the ruins of a temple called 'A'moudeyn: its form is that of a very long parallelogram; only the façade and part of the extremity are standing: its total length was 90 feet, and its breadth 25½. The façade has inclined walls, and bears much resemblance to an Egyptian pylon, but it rests on a raised basement. It is built of squared blocks of testaceous limestone, in regular courses of about six inches high; the other parts are of bricks dried in the sun. This work bears no other trace of Egyptian antiquity, no sculptures, no hieroglyphics; only, upon the façade, there are some Greek characters. It is probable that the ground plan contained several chambers.

Kamyseh is a hamlet, to the west-north-west of Siwah, on the road to the lake of Arachyeh. Not far from the village are the remains of an ancient edifice, the style of which is something similar to the Egyptian. It is built of hewn stone and plaster. The extent of these ruins is 92 feet. It cannot be determined whether they belonged to a temple or a private building. A quantity of rubbish of ancient buildings is near the ruins of Beled el Kamyseh. The present village is in an agreeable situation; a stream of fresh water meanders from east to west, and

waters fertile gardens, planted with olive, peach, and pomegranate trees.

The neighbouring mountain of Gebel el Garah el Kamyseh, resembling in form the Gebel Mouta, is also hollowed into a multitude of catacombs, but of smaller dimensions and inferior workmanship. In several of them the outer gates have the Egyptian cornice and jambs, but without paintings or sculpture. The interior is so clean, that they seem not to have been used. Human remains, which are found in these catacombs, have on them no traces of bitumen, and do not seem to have been embalmed.

In making a comparison between the hypogeums of Gebel Mouta, Drar Abouberyk, Mahaoueyn, and Kamyseh, we infer, that in some, the bodies were embalmed and placed in the Egyptian manner, and that in others, on account of the scarcity of the materials, or for other reasons, they abstained from using bitumen, and merely prepared the bodies with salt, like certain mummies at Sakara. It may be observed, that the modern inhabitants have every where violated the tombs, broken the mummies, and pulled them to pieces, to see whether they contained gold. It is because they have sometimes found this metal, after which they are very eager, still more than from a vain superstition, that they do every thing

to keep away strangers, and particularly Christians, who are able, say they, by the power of magic, to discover the most carefully concealed treasures.

At a short distance from Kamysch there is a temple of Greek or Roman construction, called Deyr Roum, or Kasr Roum; the part still standing is divided into three apartments, the longest of which is 49 feet by 21½, the height is 18½ feet; but the traces of ruins extend, on the whole, to a length of 108 feet. The ceiling, composed of large stones, is still remaining in a great part of the building: ten stones are in their places, but the roofs of the sanctuary and the portico have fallen. Before the temple there was a large space surrounded with walls, the remains of which are seen extending about 60 feet in front. What is remarkable is, that the architecture is of the Doric order; all the sculptures, cornices, friezes, and mouldings, are executed with much care. The perfection of this work may justly excite surprise in a country lying 130 leagues from the Nile, and in the midst of the immense deserts of Lybia. With the exception of the profile of the cornices, there is nothing here which puts us in mind of the Egyptian style; neither sculptures nor hieroglyphics; neither are there any inscriptions. Above the lintel of the

door of the sanctuary, there are two stones, slightly inclined, making a flat arch, in the whole thickness of the wall, to serve as a brace.

At some distance from the ruins there is a mountain hollowed out into catacombs; their direction is from north-west to south-east: the name of the place is Beled Roum, which announces the existence of a town or village, peopled by the Roumy, that is to say, the Greeks or Romans, for the Arabs give this name to both. The hypogeums are in the southern and most elevated pat of the mountain, and do not differ from those I have already described. At the foot of the mountain there are numerous tombs, made of bricks dried in the sun: their form is a semicircular arch. On the same spot are the ruins of columns, and remains of small sanctuaries, or some tombs, which are in such a state of decay, hat it is impossible to decide on the nature of them.

From Deyr Ioum we proceed to lake Arachyeh, taking the north-westerly direction: the first village we meet with is that of Agarmeh, which is in ruins, and lying near the lake. Farther on, a full day's journey from Siwah, there is another smaller lake in the plain of Chyatah.

II. *The Lake and Isle of Arachyeh.*

THE narrative of our travellers has shown what superstitious notions the Siwahans entertain of the isle of Arachyeh: "It possesses a temple," say they, "which contains the signet and sword of the prophet," on which they suppose their freedom to depend: "several times," they say, "we have attempted to go to the island; we have built boats; we have embarked with a favourable wind; and, just as we arrived, the wind became contrary, and, notwithstanding all our efforts, we were driven back to the opposite shore."

Mr. Cailliaud was unable to obtain permission to repair to this place: Horneмann had not visited it; Browne, after having entered the lake, had tried, but without success, to reach the mysterious island. Mr. Drovetti, seconded by the little army of Hassan bey, not only reached the lake, but went all round it. The charm of curiosity is now dispelled. It seems that there is nothing to justify the fanatical obstinacy of the Siwahans; they found, at this place, neither monuments nor treasures, neither the sword and signet of the prophet, nor talisman of any kind.

The Lake of Arachyeh is two days and a half journey from Siwah, in a valley inclosed by two

mountains, which extend from east to west; on the road are several plains, watered by springs of fresh water; the lake is from six to seven leagues in circumference. To the great surprise of Mr. Drovetti and his companions, they found it devoid of every vestige of antiquity. They saw nothing in the lake but naked rocks, so that the boat which they had procured was of no use to them. It might, perhaps, have been as well to take soundings, and to visit the islets, but it is pretty certain that nothing considerable can have escaped these travellers, as they went all round the banks of the lake.

§ 6. *Of the Roads leading to Siwah.*

BROWNE, the first modern traveller who visited the Oasis of Siwah, went, the first quarter of the way, along the sea coast. Setting out from Alexandria, on the 24th of July 1792, with a small caravan of Arab merchants, he found, after a march of 26½ hours, a very abundant spring; there he left the coast, proceeded directly south-west, crossing a perfect desert; and, at the end of the fifteenth day of his journey, he arrived at Siwah. Two days before, he had passed by Karet-an-el-Sogheir, doubtless the same place as Garah, in the itinerary of Mr. Drovetti, and as the Omm-el-

Seghayr of Hornemann. The entire journey of Browne took 88½ hours; but he takes care to tell us that the caravan, after quitting the coast, travelled with great celerity, for fear of being in want of water: we may, therefore, believe that the 62½ hours' journey, between the sea and Siwah, are equal, with respect to the ground travelled over, to an hour and a half each, which makes, in the whole, from Alexandria, 120 hours' journey, or so many leagues, 25 to a degree.

Aly Ghâouy, an old janissary, who was interpreter to the French army during the expedition to Egypt, had also been to Siwah, travelling first along the sea coast; but he had followed it twice as far. It was at the well of Abou Battah, about 25° 20′ east longitude of Paris, that he quitted it to enter the deserts, and take the road to Siwah. This route is rather longer than the first, though Aly Ghâouy reckoned only 13 days' journey by camels between Siwah and Alexandria, which supposes that these stages were longer.

Hornemann, for the first time, took a southern direction to go to Siwah: his object was to visit Mourzouk. He went with a caravan, which returns every year from Cairo to Fezzan, after having made the pilgrimage to Mecca. On the 5th of September, 1798, he set out from Ker-

daceh, a village in the vicinity of Cairo, on the left bank of the Nile; the caravan passed by the valley of the lakes of Natron, and that of Mekkrrah: after 11 days' journey to the west-south-west, always in the desert, he at length came to Omm-el-Soghayr, and thence, in 20 hours, he reached Siwah: this, too, is 13 days' journey.

The route followed by Mr. Cailliaud was situated much more to the south. No Arab sheik would conduct him by the road from Alexandria or Terrâneh. They remembered the recent adventure of a French officer who had set out from the latter place. The Siwahans were going to kill him, because he had procured a boat to visit the mysterious lake; he escaped death only by a miracle. Mr. Cailliaud resolved to set out from Benysouef. This place is situated under the same parallel as the Oasis; but after passing Fayoum, the route is entirely through the desert. It cost our traveller 18 days to reach Siwah by this difficult road. The stages were naturally more fatiguing than by the preceding roads, and their progress slower. In returning to Egypt, he followed a still more southern route; but instead of returning to Benysouef, he went to the little Oasis, and found, on the road, a lake of salt water.

Mr. Drovetti left Terrâneh under the protec-

tion of a strong force. He took, to the lakes of Natron, the road of the pilgrims from Barbary; thence he came to Mokarra, where there is fresh water; then, taking a west-south-west course, to a place called Lebbak, and the village of Garah. On the road he saw several little vallies, and wells of sweet water. From Garah there are two roads to Siwah, one to the south, and the other to the north, of a pretty large lake; the valley, or plain, of Zeytoun, which I have already mentioned, is on the former; Kasr Gacham on the latter. This latter part of the journey must, from the nature of the country, be the least fatiguing.

I do not here attend to the number of days or hours spent in travelling; it would not serve to estimate the distances of the places, because troops loaded with arms and baggage, with a train of artillery, cannot make regular marches.

§ 7. *The Western Oasis.*

We shall say a few words on the Oasis of Augelah, according to the accounts given to Mr. Cailliaud by the Arabs on the spot. The way to reach it, from Siwah, is by the road leading to the lake of Arachyeh; it is seven days' journey. The largest village of the Oasis is

Jalot; near this is Oud Alle, which contains a temple.

Augelah is a day's journey farther; there is another temple at the place called Oum Messous. From this point it is seven days' journey to Barca and Bengazy. Fourteen or fifteen days are requisite for the whole distance from Siwah to Bengazy; the road passes through a valley, in which terminate all the roads coming from the west.

We have seen, above, that the caravans from the west barter, at Siwah, stuffs and ornaments for dress, in exchange for dates; we must add to these articles also, mutton, which is merely salted and dried in the sun: though this imperfect process cannot preserve the meat from corruption, the people of Siwah, however, make use of it in the absence of better provisions.

ACCOUNT OF THE VOLCANOES

NOW BURNING.

(From the Annuaire for 1824).

At the desire of some friends, who wished to have an account of the volcanoes actually in combustion, I undertook to draw one up, without thinking of the difficulties which I afterwards experienced in performing my task. The particulars given by most travellers of those phenomena are incomplete and undefined. According to one, every spot of land, out of which a little smoke issues, or on which some sparks are seen, is a volcano; another gives this denomination to those mountains only which perpetually pour forth lava and throw up ashes. The first admits into the list the inconsiderable flames of Pietra-Mala, of Barigazzo, of Velleïa, of Persia, and of Caramania: the second even places the island of Santorino in the class of Solfa-terras. To this first difficulty, is added the greater one, *to* determine how great the distance between two

craters must be, for them to be considered as belonging to two different volcanoes. In the year 1706, an eruption took place at Teneriffe, through an opening two leagues distant from the Pico; the eruption which destroyed Garachico came from a point on the opposite side, a league and a half from the Pico. Thus there was an interval of three leagues and a half between the two openings, but nobody thought of considering them as belonging to two different volcanoes. Shall we consider the isle of Palma, where an eruption of lava took place in 1699, as containing a volcano distinct from Teneriffe? Shall the destruction of the third part of the island of Lancerotte, in the year 1730, be considered as the effects of a lateral eruption of the Pico, or as the indication of a separate volcano? Similar questions arise at every step, which it is quite impossible to answer. Nor would I have printed this list in a journal, which excludes every thing that is not distinguished by a certain character of precision, if I had not had the good fortune of being able to consult the two men, who, of all now living, are the best acquainted with the physical history of our earth; I mean, Baron Von Humboldt, and Mr. Leopold Von Buch.

VOLCANOES OF EUROPE AND THE NEIGHBOURING ISLANDS.

Vesuvius . . .	Kingdom of Naples.
Etna	Sicily.
Stromboli . . .	Eolian islands.
Hecla	Iceland.
Krabla	Iceland, north-east on island.
Kattlagiaa-Jokul	Iceland.
Eyafialla . . .	Iceland, south-east of H
Eyrefa-Jokul .	ditto
Skaptaa-Jokul .	ditto
Skaptaa-Syssel .	ditto
Wester-Jokul .	ditto
Esk	John Mayen's island.

Vesuvius, the only volcano now burning on continent of Europe, was extinguished sev times and kindled anew. Before the reig Titus, this mountain, which was frequently vis was only spoken of on account of its extra nary fertility. Vitruvius and Diodorus Sicu who lived in the time of Augustus, say, ind that according to historical accounts, Vesu had in ancient times emitted fire like Etna. they spoke of such remote ages, that the mem of them was nearly lost.

In the year A. D. 79, on the 24th of August, Vesuvius again burst forth. This eruption buried the cities of Herculaneum, Pompeii, and Stabia. It is well known that Pliny, the naturalist, lost his life on this occasion, having been led by his curiosity to expose himself to view this sublime phenomenon.

After this eruption, the volcano continued burning for about 1,000 years. In the sequel, it seemed to be entirely extinguished, so that, in 1611, it was inhabited nearly to the summit; and within the crater there was a grove, and small lakes.

Etna. Pindar, who lived B. C. 449, speaks of Etna as a burning mountain. Thucydides has left us some account of the eruption which took place B. C. 476. Homer does not even mention the mountain, though, in his Odyssey, he makes Ulysses land in Sicily. This silence of a poet, who has been always admired for the extent and universality of his knowledge, gives some probability to the conjecture that the volcano must have been extinguished long before the time of Homer. The Roman historians, and those of the middle ages, and modern times, have mentioned so many eruptions of Etna, that it might, perhaps, be proved, that for 2,000 years this volcano has never ceased to burn for a century together.

Seneca affirms, that volcanoes gave the fire no nourishment, but merely served to afford it vent. Father Kircher seemed to intend to comment on this expression of the Roman philosopher, when, in the fourth book of his *Mundus Subterraneus*, he affirmed that the mass of matter thrown out by Mount Etna formed a body twenty times as large as the original size of the mountain. The work of Father Kircher was written in 1660. Nine years later a single eruption of the volcano covered a space of six leagues in length, and two in breadth, with lava to an average depth of at least 100 feet. The eruption of 1755 produced, according to Dolomieu, a stream of lava, which was four leagues long and half a league broad, and of the mean depth of 200 feet. If we think of the immense hollows which must be occasioned in the mountain, and under its base, by such large eruptions, have we not every reason to be astonished, that eruptions like that of 1787 can take place at the summit of the mountain, which is more than 1,605 toises above the level of the sea?

Stromboli. Baron Von Humboldt has remarked, that the activity of volcanoes seems to be in the inverse ratio of their size. Stromboli is a remarkable confirmation of this opinion; it constantly emits flames, but with this singular

peculiarity, that for 2,000 years there has not been an eruption, properly so called, though it is evident, from the appearance of the surrounding country, that it was formerly subject to them. The *Epomeo*, in the island of Ischia, cannot be considered as a volcano; but it would, probably, become one, if Stromboli should be extinguished.

The island of Santorino had a great eruption in 1707; but as this phenomenon has not since been repeated, and the island has no proper crater, I have not admitted it into the list of volcanoes.

VOLCANOES OF ICELAND.

The last eruption of *Hecla* took place in 1766. The eruptions of this volcano, according to Sir George Mackenzie, have not, in general, the extent ascribed to them.

The last eruption of *Krabla* took place in 1724.

In the year 1756 there were five eruptions of the *Kattlagiaa*, between the months of January and September; since that period, this volcano has been inactive. However, on the 26th of July, 1823, it had three eruptions, accompanied by violent earthquakes.

The *Eyafialla Jokul* seemed to be extinct for above a century; but, on the 20th of December, 1821, it threw up flames from its summit. Eye-witnesses say, that the column of fire was still

seen on the 1st of February, 1822, and that the volcano threw out stones, from 50 to 80 pounds in weight, to a distance of two leagues. On the 26th of June, 1822, it opened at its foot, and poured out a great quantity of lava.

Eyrefa Jokul. The last eruption was in 1720.

Skaptaa Jokul, and *Skaptaa Syssel.* The eruptions of these two volcanoes, which occurred in 1783, are in the first rank among phenomena of this description. They laid waste an immense tract of country, and, in consequence of these eruptions, the atmosphere of Iceland was impregnated for a whole year with clouds of dust, through which the rays of the sun could scarcely penetrate.

Wester Jokul. Rain of stones and ashes in the year 1823.

Esk. This volcano was discovered and visited by Mr. Scoresby in 1817. It broke out and showed an eruption in April, 1818; clouds of smoke arose, every three or four minutes, to a height of from 1,200 to 1,400 yards.

ISLANDS IN THE VICINITY OF THE CONTINENT OF AFRICA.

No volcano, properly so called, is, with certainty, known to exist in Africa; but the islands

which geographers consider as belonging to this continent, contain several.

El Pico	Island del Pico; Azores.
The Pico of Teyde or Teneriffa	Island of Teneriffe.
Fuego	Island of Fuego; Archipelago of Cape de Verd.
The three Salazza . .	Isle de Bourbon.
The Gebel Teïr . .	Island of the same name, in the Red Sea.
Ascension Island . .	In 8° south latitude.

El Pico. This volcano is the only one, in the Azores, which has a conical form, and the only one which consists entirely of trap; and, lastly, it is the only one which has a mouth constantly open. Geologists agree in considering the large streams of lava poured on the island of St. George, in 1812, to be results of a lateral eruption from the volcano Del Pico. They account, in general, in the same manner, for the rapid formation of a small island in the vicinity of St. Michael, in the year 1811. This little island, of which the captain of the Sabrina, who witnessed the event, took possession, in the name of the king of England, afterwards entirely disappeared. The sea, on the spot where the island rose from the waves, has now a depth of 80 fathoms.

(c) The *Peak of Teyda*, or *Teneriffe*. This volcano seems to have been more active, by means of its lateral openings, than by its summit. The crater, properly so called, is scarcely 45 toises in diameter, and its depth 18 toises. Since time immemorial, neither lava, flames, nor smoke, visible at a distance, have issued from it. The last eruption, in 1798, took place laterally, from Mount Chahorra: it lasted above three months. Several fragments of rocks, of large dimensions, which the volcano threw up from time to time, were, according to the observations of Mr. Cologuan, from 12 to 15 seconds in falling down. Teneriffe had not been visited by an eruption for 92 years, when that of the 9th of June, 1792, suddenly occurred.

Immense streams of lava spread themselves on the island of Palma, to a distance of 25 leagues from the peak, in consequence of several new volcanic openings which were made in the years 1558, 1646 and 1677. The island of Lancerotte was likewise quite devastated by an eruption in 1730.

Fuego. We do not possess any particular information respecting the volcano on the island of Fuego. One might be inclined to adopt the opinion prevalent even in the most ancient times, that there are no other active volcanoes in the *whole* archipelago of the Cape de Verd isles.

Volcano of Bourbon. There are but few volcanoes in such activity as that of Bourbon. Its last eruption took place on the 27th of February 1821. It emitted three streams of lava, which flowed from the summit of the mountain, rather below the real crater. One of these streams did not reach the sea till the 9th of March. Some time after the eruption, a shower of blackish ashes, mixed with long pliable glass threads, resembling golden hair, fell in various parts of the island. The latter phenomenon, which was remarked particularly in the year 1766, has been considered as peculiar to the island of Bourbon; but Sir William Hamilton affirms, that he found similar glass threads, mixed with ashes, in the atmosphere of Naples, during the eruption of Vesuvius in 1779.

Persons who have not paid particular attention to these phenomena, may perhaps be surprised, that, in the year 1821, the burning lava of the volcano of Bourbon took 10 days to descend, on a declivity, through the small space between the crater and the sea. But it must be observed, on the one hand, that the lava is not a perfect fluid, and on the other, that its progress becomes slower in proportion as it grows cold. In the year 1805, Mr. Von Buch saw a stream of lava issue from Vesuvius, and reach in three hours the sea coast,

which was 7,000 yards distant; but the history of volcanoes offers but few instances of such velocity. In general the motion of the lava is but slow. The lava of Etna, for instance, takes, in many places, whole days to advance a few yards. Sometimes the surface is already solid and still, while the burning and fluid mass beneath continues to flow.

The *Gebel Teïr*, according to Bruce, lies in 15½ of north latitude. The summit has four openings, from which issue thick pillars of smoke.

We have but few particulars respecting the volcano on Ascension island. That of Madagascar, from which an immense column of aqueous vapour, visible at the distance of 10 leagues, is said to issue, is still too much enveloped in doubt to be decidedly admitted into this list.

VOLCANOES OF AMERICA.

North-West Coast.

The mountain of St. Elie; the mountain del Buck Tiempo, the volcano de las Virgenes (?)

Mexico.

Orizaba, or Citlaltepetl; Popocatepetl, or volcano of la Puebla; Tuxtla; Colima.

Guatimala and Niguaragua.

Volcano of Soconusco; Sacatepeque; Hamil-

pas; Atitlan; Fuegos de Guatimala; Acatinango; Sunil; Toliman; Isalco; Sacatecoluca, near Rio del Empa; San Vincente; Traapa; Besotlen; Cocivina, near the gulf of Conchagua; Viego, near the harbour of Rialexo; Momotombo; Talica, near St. Leon de Nicaragua; Granada; Bombacho; Papagallo; Barua, to the south of the gulf of Nicoya.

Volcano of Sotaro and Purace, a group of Popayan; Pasto; Rio Fragua.

Volcano of Cumbal, Chiles and Azufral, group of the province of los Pastos.

Group of Quito.

Volcano of Antisana; Rucupichincha: Cotopaxi; Tunguragua; Sangay.

Volcano of Arequipa (Peru).

Group of Chili.

Volcano of Copiapo; Coquimbo; Choapa, or Lisnari; Aconcagua; Santiago; Peteroa; Chillan; Tucapel; Callaqui; Chinal; Villa Rica; Votuco; Huaunauca; Ojorno, opposite to the island of Chiloe; Huaiteca; San Clemente.

Antilles.

Volcano of San Vincent; St. Lucie; Guadaloupe.

It is not known whether there have latterly been any eruptions of the volcanoes on the north-west coast.

The Orizaba is 2,650 toises. The streams of lava, which are to be seen on the sides of the mountain, leave no doubt of its volcanic nature. We are not, however, acquainted with any eruptions in modern times.

The Popocatepetl emitted smoke even at the time of the conquest of Mexico. Cortes, in fact, relates, that he commissioned ten of his most courageous companions to ascend the summit of the mountain, to discover the secret of the smoke, which he wished to communicate to Charles V. This volcano still burns, but has ceased to emit lava from time immemorial. Its height, as estimated by Mr. Von Humboldt, is 2,700 toises.

The volcano of Tuxtla lies to the south-east of Veracruz. Its last eruption, which was very considerable, took place in 1793. Showers of ashes were carried as far as Perote, which is 57 leagues distant in a straight line.

Jorullo (or Xorullo). The catastrophe to which this volcano of Jorullo owes its origin, says Mr. Von Humboldt, is one of the most remarkable in the physical history of our globe. Notwithstanding the constant communications between the two continents, this event has remained almost entirely unknown to the geologists of Europe. In the night of the 28th of September 1759, on a spot 36 leagues from the coast, 42

leagues from any volcano actually in combustion, there arose a tract, three or four square miles in extent, in the form of a bladder. In the centre of 1000 burning cones, six mountains rose rapidly to the height of 200 to 250 toises above the original level of the neighbouring plains. The most elevated of them is 259 toises high; this is the volcano of Jorullo. Its eruptions continued, without interruption, till February 1760. The subterraneous fire is now, however, much more active.

The volcano of Colima, the most westerly in new Spain, now emits only ashes and smoke. Its height is about 1,500 toises.

Mr. Von Humboldt has made the striking observations, that the peak of Orizaba, the Popocatepetl, the Colima, and other extinct volcanoes, are ranged on one line, as if they had arisen from one enormous rent, which is at right angles to the great chain that traverses Mexico, from north-west to south-east.

Among the volcanoes of Guatimala, of which the eruptions are the most recent, are: Los Fuegos of Guatimala, the Isalco, Momotombo, Talica, and Bombacko. These volcanoes, and the 16 others mentioned above, are situated between 10° and 15° of north latitude, and placed in the general direction of the Cordilleras.

The connection of the volcano of Pasto with those of Quito was proved, in a very striking manner, in 1797. Since November 1796, a thick column of smoke had issued from the volcano of Pasto; but to the astonishment of the inhabitants of the town of the same name, it suddenly vanished, on the 4th of February 1797. It was precisely at this moment that the town of Riobamba, near Tunguragua, situated 65 leagues farther south, was destroyed by a dreadful earthquake.

The Antisana is 2,825 toises high. We are not acquainted with any later eruption of this volcano than that of 1590.

The latest eruption of the Rucupichincha occurred in the year 1660.

The Cotopaxi had an eruption in 1742, while the French academicians were engaged, in the vicinity, in measuring the degree of the meridian. The pillar of flames and combustibles rose 500 toises above the summit of the mountain. The snow, which, in the course of two centuries, had accumulated on the sides of the mountain to 500 toises below the summit, melted in large masses, rushed impetuously into the plain, and formed waves from 60 to 100 feet high. Mr. Bouguer estimated the rapidity of the waters at 40 or 50 feet in a second, at the distance of three or four

leagues from the volcano. Six hundred houses were swept away, and 700 or 800 persons perished in the waters.

The eruptions of 1743 and 1744 have been still more destructive.

Bouguer and Condamine, on examining the still evident traces of the great eruption of 1553, the remembrance of which has been handed down among the inhabitants from generation to generation, found that the volcano, on that occasion, had thrown stones to the distance of more than three leagues, the cubic content of which was from 12 to 16 toises, and consequently, as Mr. Condamine expresses it, much larger than an Indian hut. There could be no doubt of the origin of these stones; they formed lines on all sides, the direction of which was towards the volcano. It does not appear that Vesuvius ever threw up stones higher than 600 toises.

The Tanguragua had an eruption in 1641.

The Sangay has continued in a state of combustion ever since the year 1728.

The Chimborazo is not placed on the list, because we have no account of its eruptions, though nobody doubts its volcanic nature. The same is the case with Carguairazo. The inundation of mud which, in 1698, covered a tract of 18 square miles in extent, was not properly the

effect of a volcanic eruption. On the falling in of the Carguairazo, the waters concealed within it rushed impetuously into the plain, and caused the inundations mentioned by the American historians.

On certain maps of Chili, more volcanoes are laid down than I have enumerated in this list. I have confined myself to those, the existence of which is the most certain; and I have to observe, that of the 16 before mentioned volcanoes of this country, some are now perhaps extinct. The Peteroa had an eruption in 1762, the Villa Rica in 1640.

It excites surprise, on looking at the map of America, that no volcano is to be found, either between the 2° and 16° of south latitude, and the 17° and 27° of north latitude. If it were not for the volcano of Arequipa, the series of Guatimala and Nicaragua, the groups of Popayan and Los Pastos would be separated from the long series of Chili, by a space of 25° of latitude, without any volcano. Though there is only one volcano in Peru, there are few countries in the world where earthquakes are more frequent and more destructive. They often cause immense clefts, over which it is necessary to throw bridges, in order to restore the communication between the different provinces. One of these

clefts, caused by the earthquake which destroyed Lima in 1746, was one league in length, and one toise (?) broad.

The volcano of the island of St. Vincent threw up lava in 1718 and 1812. The ashes of the last eruption were carried, by the superior current of the air, in a contrary direction to the Monsoon, as far as the island of Barbadoes, which is 30 leagues farther eastward.

At Saint Lucia sulphur continues to be formed by the condensation of the vapours which arise from the crater of the Oualibou, which is from 200 to 300 toises high. Streams of hot water likewise issue from it.

The last eruption of the volcano of Guadaloupe, which has an elevation of about 800 toises, was in the year 1797. It then threw up pumice stones, ashes, and clouds, impregnated with sulphureous vapours.

I shall here conclude the account of the volcanoes of America, with the observation, that no volcanoes are met with either at Buenos Ayres, Brazil, in Guyana, on the coast of Venezuela, or, lastly, in the United States; that is, on no point of the eastern coast of this extensive continent. Even to the east of the Andes, there are only three small volcanoes, lying near the sources of the Caqueta, the Napo, and the Marona, and

which, probably, according to Mr. Von Humboldt, are only the lateral effects of the volcanoes of Popayan and Pasto.

VOLCANOES OF ASIA.

The Elbrus . .	Persia.
The Tourfan . .	Central region of Asia; 43° 30′ of lat., 87° 11′ of long.
The Bisch Balich	Ditto, 46° 0′ lat., 76° 11′ long.
The Avatscha .	Kamtschatka.
Tolbatschik . .	Ditto.

Three other volcanoes, more considerable than the preceding, in the same country.

Kurile Islands.

Nine volcanoes in combustion, near Krascheninnikov.

Aleutian Islands.

Four volcanoes, at Ouminga, Oonolashka, Omnak, Ourimak. The latter had a violent eruption in 1820.

Japanese Islands.

Ten volcanoes. There are three on the island of Niphon, which is the largest. According to Kämpfer, several of the Japanese volcanoes are subject to dreadful eruptions.

Loochoo Islands.

The sulphur island threw up a thick sulphu-

reous vapour, as the Lyra, commanded by Captain Basil Hall, passed near it, on the 13th of September, 1816.

The Elbruz is mentioned by many travellers as a volcano still in a state of combustion; but this is rather doubtful, and, at all events, we have no authentic testimony of any eruption.

The mountains of Tourfan and of Bisch Balikh are represented as constantly emitting fire and smoke: this is affirmed in an article of the Japanese edition of the Chinese Encyclopedia, which Mr. Remusat has translated. It is said, that the Calmucks here gather the sal-ammoniac, which they send to various countries in Asia.

The Avatscha had an eruption in 1779, during the time that Captain Clerke was in the harbour of St. Peter and St. Paul. In 1787, La Peyrouse and his companions saw flames and smoke uninterruptedly issuing from the summit of this mountain.

The Tolbatschik had an eruption in 1739.

A column of smoke constantly ascended from the summit of a third volcano, more considerable than the others, but the name of which Captain Clerke does not mention. Since the time of that navigator, two new volcanoes have broken out in Kamtschatka.

Several travellers have reckoned Adam's peak, in Ceylon, among the number of volcanoes; Dr. John Davy, however, who visited it in 1817, found no trace whatever of an ancient or recent eruption.

THE SOUTH SEAS.

The Philippine Islands.

Five volcanoes, in a state of combustion. Travellers have, hitherto, given but very uncertain accounts respecting the volcanoes of the Philippine islands. The one on the island of Lucon is called Albay; the Taal lies to the south of Manilla; the Fuego to the south of Lucon. There is also a volcano in Mindanao.

Borneo.

Geographers agree that there are volcanoes in Borneo, but they do not accurately determine either their situation or number.

Barren Island.

Barren Island has a volcano about 600 toises high, which very frequently sends out immense pillars of smoke, and red-hot stones, of the weight of three or four tons. It lies in latitude 12° 15′, and is 15 leagues distant from the most easterly of the Andaman islands. The whole island is not above six leagues in circumference.

Sumatra.

Marsden lays down four volcanoes on his map of Sumatra; but as the interior of this island is but imperfectly known, there are, perhaps, some others.

Java.

The island of Java has a great many volcanoes which are ranged in rows, or straight lines. The following are their names, with the dates of their last eruption.

Salak . .	1761, eruption.
Tankuban	1804, sulphureous vapour.
Guntur .	1807, eruption.
Gagak .	——, partial combustion.
Chermai .	1805, eruption.
Lawn . .	1806, sulphureous vapour.
Arjuna .	——, constant column of smoke.
Dasar . .	1804, eruption.
Lamongan	1806, eruption.
Tashem .	1796, eruption.
Klut . .	1785, eruption.

The Arjuna has an elevation of 10,614 feet English: this mountain is, however, not the highest in the island.

The mountain of Papandayang was one of the chief volcanoes of the island, but it no longer exists; this mountain entirely vanished between the 11th and 12th of August, 1772, after the

appearance of a great luminous cloud, and sunk into the earth. It has been calculated, that the tract of land, swallowed up in this manner, was 15 miles long and 6 broad.

Sumbava.

The Tomboro of Sumbava had a violent erup- in the year 1815. The detonations were heard at Sumatra, very sensibly, in points which were 300 leagues distant in a straight line.

Flores.

The volcano of this island was seen by Bligh.

Daumer.

Daumer has one volcano. On a small island, between Timor and Ceram, in the sixth degree of latitude, there is a volcano in a constant state of combustion. Dampierre saw it in 1699.

The Island of Banda.

The Goonoung Api of Banda had a dreadful eruption on the 11th of June, 1820, when it threw out red-hot masses of stones, as large as the habitations of the natives. Many of these stones were cast up to double the height of the mountain.

Molucca Islands.

On the island of Ternale there is a burning volcano. Tidore is the name of one of the Moluccas, and of its volcano.

Célèbes, according to geographers, contains

several active volcanoes; they do not, however, particularize their position.

Sanguir. Between Mindanao and Célèbes, there is one of the largest volcanoes in the world.

New Guinea.

In the year 1700, when Dampierre visited the coast of New Guinea, two volcanoes were burning on the island.

New Britain.

There are three volcanoes in the archipelago of New Britain. On the 29th of June, 1793, Entrecasteaux witnessed the eruption of one of them, which lies in 5° 32′ latitude, and in 145° 44′ east longitude. A stream of lava rushed towards the sea, and formed several cascades. Lemaire and Schouten had already previously seen the same volcano during an eruption.

Archipelago of Espiritu Santo.

The island of Amhrym, in this archipelago, called by Bouganville the Great Cyclades, and by Cook the New Hebrides, contains an active volcano.

The island of Tanna is likewise volcanic. In August, 1774, Cook was witness to an eruption which occurred there. The volcano threw up flames, ashes, and stones, of the size of the ship's long-boat. In April, 1793, Entrecasteaux and

his companions saw a thick pillar of smoke on the summit of the mountain in this island.

Archipelago of the Marianas.

They reckon ten volcanoes in this archipelago, but I do not know whether they are all in the class of those still burning.

Sandwich Islands.

The Mouna Roa, in Owhyhee, seems to be a volcano; but it is doubtful whether this is the case with the Mountain Mowee, which Vancouver calls Mount Volcano.

Island of Amsterdam.

This island appeared all on fire, when it was seen by Entrecasteaux, in March 1792. Some regarded this phenomenon merely as the effects of a fire; others concluded from it that the island contained a volcano.

Islands of the Marquis of Traversé.

These islands, which have been lately discovered by Russian navigators, and lie between New Georgia and Sandwich Land, contain a burning volcano. There is also a volcano in a state of combustion on Sandwich Land.

GENERAL VIEW.

	Number of burning volcanoes		
	On Continents.	On Islands.	Total.
. . .	1	11	12
. . .	—	6	6
a . . .	58	3	61
. . .	8	24	32
leas . .	—	52	52
tal . .	67	96	163

ncluding this account, I will add the , that, with the exception of the two es in central Asia, the existence of which ever, rather problematical, there is per- t one on the preceding list situated above nes from the sea. We might almost be l to conclude, from this singular fact, water acts an important part in volcanic ns.

her phenomenon, equally deserving the n of the observer, is the great distance at the noise, that precedes or accompanies ns, may be heard. We have mentioned that the detonations of the Tomboro in a were heard at Sumatra, 300 leagues in a straight line. Mr. Von Humboldt,

in his excellent work, relates a fact almost as surprising.

"The explosion which announced, on the 27th of April 1812, the first eruption of the ashes of the volcano of Saint Vincent, did not appear to the inhabitants louder than the report of strong artillery. This explosion was, however, plainly heard on the Rio Apure, at the confluence of the Rio Nula, 210 leagues from the volcano, equal to the distance of Vesuvius from Paris. The report was so distinct that it was taken for the firing of artillery, and military preparations were made in many parts of the American continent."

TRAVELS IN EGYPT,

In 1820 and 1821,

BY BARON HENRY MENU VON MINUTOLI.

The valuable and long expected travels of General Minutoli being now published in Germany, we doubt not that an analysis of their interesting contents will be welcome to the English reader, especially as the great extent of the original, and the numerous plates, must prevent it from becoming very generally circulated.

General Minutoli took advantage of an unexpected opportunity, which allowed him an interval of leisure in his official duties, to solicit from the king of Prussia, his sovereign, leave of absence to undertake a scientific tour in the east. His original plan was very extensive; he proposed to travel through Egypt to Dongola; thence to visit the Cyrenaica, the Oases, the Red Sea, Sinai, and Horeb; and lastly, to return by way of Vadi Musa, Palestine, Lebanon, Balbec, Palmyra, Ephesus, and Troy; and then by way of Constantinople, through Greece, Sicily, Italy,

and Switzerland: but the Greek insurrection, which broke out with increased fury, just as the travellers were leaving Africa for Asia, prevented the execution of their plan, and they were obliged to content themselves with a visit to the Oases of Jupiter Ammon, which is doubtless the most important part of the whole tour; and with an excursion through Egypt, as far as Syene. The ministry had taken care that some men of learning and artists should accompany the general; namely, Professor Liman, a distinguished architect; Doctors Hemprich and Ehrenberg, and Mr. Söltner, as naturalists; and Dr. Scholz, a learned orientalist, who set out for Alexandria before the rest of the party, by way of Rome and Triest.

On the 17th of August, the general and his lady embarked at Triest, for Alexandria, and their three weeks' voyage was not attended with any remarkable occurrence. When they arrived on the coast of Africa, they were in great danger of shipwreck, the low shore being entirely concealed from view by a thick fog. A north wind suddenly rising, relieved them from the danger, and carried them safely through the Marabout, the only secure passage into the ancient harbour of Alexandria. The view that meets the eye is by no means pleasing. Low,

desolate, and dreary, the African coast stretches to a great extent, till it is lost amidst the vapours raised by the heat, and no enlivening verdure refreshes the eye. Pompey's pillar presents itself as a solitary object, and serves navigators as a guide. On the small tongue of land, which divides the old from the new harbour of Alexandria, stands the Harem, the palace of the pacha, that of his son, Ibrahim: and the city itself, with its flat roofed houses the half-decayed walls, the rubbish and ruins, resembles rather the scene of a conflagration, than an inhabited city. The beautiful groves of palms which once surrounded it have been cut down by the French during the invasion, for the defence of the city, and none have yet been planted in their room. The more melancholy the first impression produced by the Egyptian coast had been, the more agreeable was the reception given them in Alexandria itself; where the hospitality usual in the east, is exercised in the most disinterested manner. The travellers were very politely received in the house of Mr. Tourneau; and Messrs. Drovetti, Rosetti, Buccianti, and D'Anastasy, European consuls, rivalled each other in showing them civilities. Through the medium of the Armenian Boghos Jusuff, the first interpreter to the viceroy, the general's letter of recommenda-

tion was presented to Mahomet Ali Pacha, which was immediately succeeded by a very polite invitation. The audience, which was quite free from the stiff etiquette of the European courts, took place three days after; and the easy and affable manners of the pacha, united with a cordial cheerfulness, without any derogation to his dignity, soon gained the entire confidence of the travellers. The pacha showed the greatest readiness to promote their wishes, assisting them in their preparations, furnished them with recommendations and firmans, and promised them a number of armed men as an escort.

After mature consideration of all the information which they had been able to collect, no enterprise that could be undertaken in the approaching season, seemed to promise a more ample harvest, than a journey westward to Derna and Bengazi, in the vicinity of which are the magnificent ruins of Cyrene, which have been neglected for 1,500 years; some idea of the extent and importance of which is given by Della Cella, who visited that country in 1817.

The want of a firman from the sultan for the Tripolitan territory, was supplied by a letter of recommendation from Mahomet Ali Pacha, to the Kalil bey of Bengazy and Derna, and every exertion made to ensure a successful issue to the

enterprise. But the naturally suspicious temper of the Arabs soon excited well-founded apprehensions. The news of the commencement of the Greek insurrection had already penetrated into these remote regions, and they supposed the general's expedition to be in some manner connected with it. The Arabs called him, as they had Buonaparte, *El General Kebir*, the Great General, and this honourable epithet was by no means calculated to promote the scientific object of the journey. As they fancied that the Prussian general merely wished to travel along the coast, in order to look out for harbours and landing places, suitable for some European invasion in favour of the Greeks, of which they entertained serious apprehensions, the Arabs, who conducted the caravan, studiously endeavoured to keep the travellers as far as possible from the sea coast. To this was added the petty jealousy of the European speculators in antiquities, living in Egypt, who regarded the intended visit to the Cyrenaica as a silent reproach to their own indolence, as they had never yet ventured to extend their plans to that country, which was so easily accessible to them; and they really seem to have secretly laboured with the most ignoble views to defeat the object of Baron Minutoli's efforts.

informed, by a messenger from Alexandria, that he was on the way to join them, they halted for a day to await his coming; it was fortunate they did so, for he arrived wrapped up in beds, upon a dromedary, exhausted and ill, in consequence of the fatigues of his voyage. A little rest soon recovered him, and he felt himself strong enough to accompany the caravan on the 10th of October.

In the evening of that day, they encamped at Bir El Hammane, or Well in the Desert. It was here that a slave of the sheik, after a quarrel with one of the interpreters, was going to kill him, and had actually levelled his piece, which was with difficulty taken from him. This scene gave rise to a violent dispute with the sheik, who at length declared himself willing to shoot the slave; but this being declined, he let him go entirely unpunished. On the next day's journey the Arabs began to refuse the little services which they had hitherto performed, and required that the travellers should fetch water themselves, take care of the camels, &c.; they were free men, they said, and not slaves. The baron immediately threatened to return, and this again produced its effect; the sheik begging them, through the interpreter, to consider that he had made himself answerable for their safety. He, nevertheless,

continually gave cause to fresh disputes. Thus, for instance, according to the agreement concluded between them, he engaged to pay the guide, a Bedouin of the name of Abuhrik, who was to conduct the caravan through the desert to Derna. This guide, when they had got half way, demanded double the sum agreed for by the travellers, and threatened to leave them if they did not accede to it. The sheik required that this should be done, likewise declaring that he would leave them. With much difficulty the question was set at rest for the present, by the resolution, that after their return to Alexandria, the persons who had made the contract should decide who was to pay the guide. Thus every day, nay, every hour, the dislike the Bedouins had to the travellers manifested itself. Any trifling accident which might occur to one of them, excited shouts of joy in the whole horde; the amphibia, insects, and plants, collected by the naturalists, were frequently destroyed and scattered by them, not merely through inattention, but by design, as soon as they had turned their backs; so that the fruit of many days' labour was often annihilated in a moment. They demanded rewards for the smallest trifle, and destroyed many interesting articles which they found, because the payment did not answer their expectations. The inter-

preters reported, that the Bedouins often agreed among themselves not to give them the right names of places, because, as they said, they must not make these Christian dogs too wise. They also evidently endeavoured to protract the journey, to make short stages, and longer halts, as they hoped to profit by this delay.

They continued their journey over a soil more rocky than sandy, through a perfectly flat country, destitute of trees, but covered with low, and, for the most part, aromatic shrubs, which appeared dreary and solitary, but not so barren and dead as the travellers had imagined. Their collection of plants was not inconsiderable; Dr. Ehrenberg, who has great knowledge of mosses, and the delicate parasitical plants, discovered a great many new species of them, which he collected and designed with much care. There was no want of serpents and lizards; of mammalia they found only mice, hedgehogs, and jerboas. The Arabs had with them very well trained falcons, with which they caught a kind of bustard (otis hubara), which is very common. They often caught enough to serve the whole company for a day. They also took great numbers of pigeons, herons, snipes, and small singing birds; there were, however, but few among them which are not found in Europe.

The small monuments, chiefly ancient sepulchres, which are met with in the desert, were also inducements to make excursions, and of which Mr. Liman made sketches. On one of these occasions, the party delayed so long, that with all their exertions they could not reach the caravan before sunset. The guides therefore conducted them to an Arab camp, where the travellers entered the first tent, and were invited by the host to seat themselves on a straw mat; and after they had taken off their shoes according to the custom of the country, and covered their feet with their mantles, a repast was set before them. It consisted of white beans mixed with crumbs of bread, which was served in a large wooden bowl, from which every body helped themselves with their fingers. For dessert they had a kind of salt cake, with onions. Such solitary proofs of the celebrated hospitality of these people had always to be well paid for in money.

One of their greatest hardships was want of water. They seldom met with wells, either dug or hewn; but generally only with dirty pools, in which there was stagnant water, collected from a scanty spring, either brackish, or at least strongly impregnated with natron. They were often obliged to carry a stock of water, for several days, in leather skins; and if, as was the case on the

stations, from the 11th to the 14th of October, they did not find the expected springs, the party was obliged to content itself with the sediment, which was thick, and as brown as chocolate; while drinking which, they were forced to stop their noses. On the 15th of October, the travellers, therefore, celebrated a twofold festival, on arriving at the well of Bir el Hubba, where they again found good water; and in the evening drank some bottles, in the general's tent, to the health of the Crown Prince of Prussia, whose birth-day it was.

Passing by Bîr Thaun, an antique cistern; traversing an undulating country, where they for the first time saw the Mirage; alarmed by hostile Arabs; touching on the Roman ruins of Zuba Soyer Wahe, and Guble, they at length reached the coast of the ancient Parætonium, which is now called El Baratoun by the Arabs. According to Pliny, (H. N. V. 6,) Parætonium lay 200 Roman miles from Alexandria, on the coast, and on the road leading to Cyrene; which distance will appear pretty accurate, if we consider the indentations of the coast. In the numbers on Peutinger's table, there is an error on this route; for if we add the distances of the three stations between Parætonium, which it calls Pretonium, and Alexandria, the sum total is only 116 miles,

which is evidently too little. The ancient town was also called Ammonia, and the distance from that to the Oasis of Jupiter Ammon was 1,300 stadia.

On the 19th of October, they sent the messengers to the bey of Derna, with the letters of recommendation from the viceroy, to obtain permission to enter the Tripolitan territory. The general previously consulted with his companions, whether it was advisable to continue the journey with an escort so little to be depended on; the perfidious sheik, their guide, doing every thing in his power to prevent the continuance of their route to the Cyrenaica. Many of the company were of opinion that an enterprise, on which so much money and time had already been expended, and which, if successful, promised such an ample reward, ought not to be hastily abandoned; that cowardly malignity might be overcome by courage, resolution and vigilance; and that they must at least await the answer from Derna, before they gave up all hopes of the happy issue of their expedition. They accordingly continued their journey, in short stages of eight or ten hours, but not without violent disputes with the sheik. They pitched their tents every night, if the hardness of the ground, the too deep sand, or high wind, did not hinder it; in

which case they made, by means of their baggage, little huts, into which they could creep, where they slept in their clothes upon mattresses. One always stood sentinel, who was relieved every two hours. The sentinel very frequently gave the alarm in the night, when he heard a suspicious noise, human voices, or perhaps even loud cries, in the vicinity. Sometimes there were parties of Arabs, who had gone astray; sometimes their own attendants, who had attempted to pillage a neighbouring horde; and sometimes, perhaps, there were really robbers, who were deterred by the vigilance of the travellers. They were likewise troubled in the night with hyænas and wolves; but they excited little alarm, as the party was prepared for less welcome visitors. In general they met with a great number of larger animals in these parts; antelopes, in particular, were very numerous.

On the 22d of October the caravan arrived at the well of Bir el Kor, which contains excellent water, and, where the sheik, who had gone on before, was waiting their arrival. The baron here made known his resolution to proceed no farther, but to return by way of Siwah, because, from the slowness of their progress, and the delay of the answer, too much time was lost, which he could employ better in Egypt. He, however, left every

one at liberty to act according to his own conviction, and by no means desired that his resolution should induce the whole company to return. In this alternative, which was certainly difficult, Professor Liman and Dr. Ehrenberg resolved to persist in the original plan; Dr. Hemprich dissuaded; Dr. Scholz was willing to accompany them; and the majority having voted for proceeding, Lieutenant Boldrini joined them: so that the two naturalists, with their assistants and interpreter, Professor Liman, Dr. Scholz, and Lieut. Boldrini, with 17 armed Arabs, 29 camels, and two horses, went on the westward, to the Tripolitan territory, under the guidance of a relation of the sheik, and a Mograbin; while General Minutoli, with Mr. Gruoc, two servants, eight Arabs, conducted by the sheik and a Mameluke, with 12 camels and three horses, turned sidewards towards Siwah, the Oasis of Jupiter Ammon, on the 25th of October.

At the beginning all appearances were favourable. The Bedouins, ever since their old sheik had left them, were friendly, familiar, nay, even obliging; and, for the first few days, there was a sufficiency of good water. They soon reached the frontier of Tripoli, which is formed here by a high mountain, Dschibl-Gebir, which, properly speaking, is only the northern terrace-like slope

of an elevated plain. They encamped in its vicinity, near Auscherim, where there are three wells, about 20 fathoms deep, hewn in the rock; which contained excellent water, which the Bedouins, even those that live at a great distance, fetch for themselves and cattle. They were here obliged to await the return of the messengers, till which time they were not permitted to cross the frontier; but the Arabs represented, that on account of the great resort to the well, it was not proper to remain close to it; nay, they even urged them frequently to change their camp, that it might not be too generally known, for this might excite rapacity, and lead, besides, to many inconveniences. After having continued, for six days, within a league of Auscherim, they retired two leagues farther southward, to the vacant place of Wadi Dachan. Here the dangerous Chamsin, which had prevailed in the latter part of October, blew with such violence that it raised immense clouds of sand, filled the air with it, and threw down their only shelter, the tent; from the parts of which they hastily erected a low hut, into which the whole company crept. The parching heat of this wind produced various symptoms of illness, the least of which was sickness, nausea, and tormenting thirst.

On the 8th of November they removed their

camp to Gasser Eschtäbi, on the north-eastern foot of the Dschibl-Gebir. There is here, as its Arabian name likewise indicates, a castle; an ancient Saracen fortress, of a square form, the lower part of which is still in perfect preservation. While Messrs. Liman and Boldrini were engaged in making designs of this building, the rest of the party amused themselves with the chase, and in collecting insects and plants. The neighbouring Bedouin hordes came, with their sick, to obtain advice and medicines from the physicians, and brought the milk and flesh of camels, and dates; but the travellers had to pay for all these articles. On the 10th, a sheik, sent from Derna, came to them, and immediately addressing himself to the Arabs, began to reproach them for having gone with the Christians, as they might have obliged them to return back with the others to Siwah. He told them, that the arrival of the strangers had been long known at Derna, that they were considered as spies of the pacha of Egypt, who had evil intentions, and would soon be followed by an army. They could not, he said, expect an answer for the present, as the bey of Derna had judged it prudent to inquire at Tripoli whether he should admit them into Barbary, and that it was not at all likely that the answer would be favourable. Hereupon the Arabs held

frequent consultations, in the old fortress, to which they also invited the sheiks and imans of the neighbouring hordes. The words which they afterwards dropped excited suspicion of perfidious intentions, so that the travellers thought it necessary to be prepared to defend themselves; but Abdahrik, the guide, affirmed that no attention should be paid to the threats of these people. When, besides this, some of their own party advised to proceed, without waiting for permission, a suspicion arose that they had been deliberating whether their own advantage did not recommend them to conduct the strangers into the Tripolitan territory, whose destruction would have procured for them a share in the plunder; and where, according to the rights of hospitality, they had, at least, to expect to live at free quarters. The majority of them, however, insisted on turning back, alleging, as a pretext, that their provisions were exhausted, and no supply to be procured in these parts. When the travellers, therefore, declared their resolution of waiting for the decisive answer, the Arabs threatened to go away with their camels; but they afterwards thought better of it, and remained.

Meantime a caravan passed their camp, which had left Derna seven days before, and confirmed every thing that the old sheik had said; namely,

that an order must be received from Tripolis before an answer could be given to the request of the travellers. They had hitherto considered this statement to be false; but as it was now confirmed by unexceptionable witnesses, it could not but claim their serious attention, particularly as the answer might easily be delayed two months, during which period the contract with the Arabs would expire; so that the company, abandoned, in the middle of the desert, by its guides and camels, would have been wholly at the mercy of the robbers. With a heavy heart, therefore, they renounced the long cherished hope of exploring the wonderful ruins of the ancient Cyrenaica, and the site of the Gardens of the Hesperides, and gave orders for proceeding to Siwah. Here, too, Abuhrik, their guide, gave a new proof of his treachery; for, though hired and paid for the journey to Derna, he demanded, though he had now less trouble, 30 piasters additional for the route to Siwah, which, after a violent dispute, it was found necessary to concede to him.

On the 14th of November, at noon, the caravan set out from the castle of Eschtäbi, and travelled through the whole of the following night. The way was over an entirely naked rocky plain, where not a plant was to be seen for miles around, and no living creature, except some lizards and insects.

Every member of the company was equally desirous of traversing so dreary a wilderness in as short a time as possible, that their stock of water might hold out, and that they might overtake General Minutoli at Siwah. They travelled, therefore, with the greatest exertion, day and night, and on the evening of the 18th of November arrived, quite exhausted with fatigue, in the valley of Siwah, the Oasis of Jupiter Ammon. But the baron had left that place five days before; the Turkish commander, too, to whom the letters of recommendation were directed, had gone to Cairo to bring the tribute of dates. The elders of Siwah, to whom the interpreters were sent with the firman, declared that they would not see any Christian, and were even uncertain whether they should not take the whole party prisoners; for that even the presence of the general had caused a popular tumult, and given rise to quarrels, attended with bloodshed; so that he had been obliged to hasten his departure unobserved. They, however, offered to assign the travellers an inclosed court-yard, where they might pitch their tent, and recover a little, after their fatigues in the desert. However much resemblance this bore to imprisonment, there remained no alternative; and our travellers accordingly took up their abode in the tent,

greatly dissatisfied at being so near the celebrated Temple of Jupiter Ammon, the Fountain of the Sun, and so many other important monuments, without being allowed to visit them. The naturalists, however, had now and then the pleasure of having some animals or plants brought to them; and sometimes, though privately, they looked for them at a small distance from their tent, and were delighted with the novelty of the objects they met with. Persons afflicted with intermittent fevers, and others with ill-cured gunshot wounds, were brought, to whom they gave advice and medicine; in return for this, meat, milk, and excellent dates, were sold to them; for the best known grow here. They, therefore, procured a supply for the journey back; which the Arabs, however, when they were going to depart, refused to load, and threatened to go away with their camels. But they now knew them well enough not to regard these menaces, and therefore told them, in a tone of command, they might go where they pleased, they could easily do without them, and would rejoice to be rid of such troublesome and expensive attendants; on which they became tractable, and, without saying a word, loaded the sacks of dates upon the camels. Here they were again joined by the old sheik Endawi, and, from this moment,

the peace of the whole horde was disturbed. There was every reason to suspect that it was he who had made the Siwahans suspicious and hostile to the strangers.

On the 23d of November, the caravan left Siwah to commence the journey to Alexandria, which proved to be the most fatiguing part of the whole expedition. In the three first days' journey they came to Dyr-asa, a small inhabited Oasis, with good water, where they halted for a day; and, three days after, arrived at Bir Haje, where the water was already a little brackish, but there being no better, they were obliged to take a supply of it. Here Professor Liman was taken ill, and, on his account, they delayed their departure for one day. On the following morning he felt himself rather better, and they proceeded, but he was worse again in the evening; to a violent diarrhœa was added fever and burning thirst. The naturalists' assistant, a Saxon, of the name of Söltner, was attacked with the same complaint. Both patients were so debilitated that they were obliged to be wrapped in mantles and mattresses, and tied on the camels. Every thing was done to counteract the bad effects of the water, by administering some of the medicines they had with them.

After two exceedingly fatiguing days' march, they came to the well of Bir Lebuk, the water of

which was, unfortunately, so bad, that even the horses, which had drunk nothing for 48 hours, refused to drink it. Some, who, notwithstanding its disagreeable taste, attempted to drink it, were immediately seized with a violent sickness. They had only one skin, with tolerable water, from Bir Haje; and there was no resource left, but to thirst, in order to save this scanty store for the sick. Fortunately, the weather on the succeeding days was cool, and the sky cloudy, otherwise this privation might have had a very injurious effect even upon the healthy. It was, likewise, fortunate that, at the halting places, they always found some wood for fuel, which enabled them to make the bad water rather more palatable to the sick, by boiling it, with an addition of flour. In three days they reached Bir Bamam, a place with several wells of good water, where they resolved to halt for two days, on account of the patients; but, on the second morning, there fell such a violent shower of rain, that the tent, which was already in a bad condition, afforded no protection. The sick were lying on the ground, in the water, with the healthy. The Arabs, besides, declared that, if the rain should return with equal fury, the ground would become so slippery that the camels, which are subject to slip, could not proceed, and then they could not

think of leaving this place for some time. As they hoped to be able to reach Alexandria in a few days, and were in so great want of provisions, that, instead of meat, they were forced to be content with roasted snails, (for, since they had left Siwah, they did not even find owls and crows, which they had before not disdained,) they broke up as soon as the rain abated a little, in order to advance a good way during the night. As many of the travellers as were still in health, all in their clothing, which was in bad condition, covered with vermin, exerted their remaining strength to bring their patients forward, who hourly grew worse, and to reach, if possible, a secure place of shelter; for it was much more dangerous, in such weather, to remain lying in the desert, during the night, than to march on. But the Arabs, who, on account of the exhausted state of the camels, had refused to load a part of the baggage, part of which, for instance, a chest with some specimens of natural history, and a cask of spirits, had really been destroyed, and thrown away, were uncertain, in the dark, about the way; the rain became more violent, the sick cried for relief, and all cast an imploring eye to Heaven. They were suddenly met, while in this distress, by a wandering horde, which had gone astray, and which they, at

first, took for robbers, but who most unexpectedly gave them water and dates for the sick, camel's flesh, and other refreshments. Here, therefore, their sufferings had attained their highest degree, for, the following evening, the 7th of December, brought them to Alexandria.

They here pitched their tent between a Catholic and Greek convent, after Professor Liman had been kindly received by the Prussian consul, Mr. Buccanti, into his own house. Meantime, the rain poured down in torrents the whole night, and it was soon evident that it was impossible to remain longer under so frail a covering. Through the intervention of the consul Mr. Caracco, and of Dr. Malpurgo, they obtained, as no other place was to be procured, a room in the hospital. Their time was now divided between the necessary arrangements and waiting on their sick friend, to whom all possible attention was paid. But, for him, relief came too late. On the morning of the 12th of December, they were awakened with the melancholy news that he had become visibly worse, and at 11 o'clock he expired, without a pang, in the full possession of his faculties, in the arms of his friends. Profoundly afflicted, they accompanied his body, the same day, to a grave in the church-yard of the Greek convent, where the funeral service was performed by a

Swiss of the name of Tschudi, who had been sent hither by the London Society for the conversion of the Jews.

At the same time, also, Lieutenant Gruoc died at Cairo, whither he had returned with General Minutoli, in consequence of the hardships he had endured. Mr. Söltner, on the other hand, was saved from death by judicious treatment and constant care, though he lingered two months in a hectic nervous fever.

Doctors Ehrenberg and Hemprich, meantime, occupied themselves in arranging and packing up their collections, which were to be sent direct to Berlin. But now the plague broke out in Alexandria, and persons infected were received into the hospital, in the last stage, and died speedily. This, of course, threw the travellers into great embarrassments, from which they were relieved by the kindness of the consul Buccanti, who, disregarding the inconvenience to which it put him, received them into his house, after they had performed a short quarantine, for the satisfaction of his family. Nevertheless, their situation remained unpleasant, as the remittances they had to expect from Triest had not come, and a remaining sum of 300 piasters, which they had left at Alexandria on their departure, was most unexpectedly withheld from them. But the

general esteem which they had acquired served them on this occasion, and so far made them easy, that they were able completely to arrange their collections, and, at the beginning of January 1821, to send a great part of them to Berlin, consisting of 30 mammalia, 106 birds, 128 amphibia, a considerable number of fish, shell-fish, mollusca, worms, and 2000 insects, besides 120 specimens of minerals. The plants, woods, seeds, and also a collection of fishes of the Nile, with the detail of their journey, and some hundreds of drawings, including Professor Liman's architectural sketches, were reserved for the next consignment, which, with the quadrupeds, birds, and amphibia subsequently collected, filled about eight chests, and was dispatched in the following March.

After all this was completed, and their remittances received, they hired a small boat, and on the 19th of January left Alexandria to go to Cairo by the new canal, which was just opened. Their voyage was very tedious, and was delayed by the boatmen learning, when they had got within one day's journey of Cairo, that all vessels were laid under embargo there, on account of an expedition preparing against Dongola; on which they refused to go farther, till they were compelled by an expensive lawsuit. On the 2nd

of February they at length arrived at Bulak, the harbour of Cairo, where they hired a small lodging, to continue, undisturbed, their professional labours, and prepare for a voyage up the Nile; which they intended to commence very shortly, as they had, besides, reason to apprehend that the plague would force them to leave Cairo in March. To accompany them they had their invalid German attendant, and an interpreter, whom, however, though they had great reason to praise him, they hoped soon to do without, as they were already tolerably well skilled in the Arabic.

General Minutoli, after parting with the rest of the company, took the road to Siwah, and passed the wells of Bir Thoana and Bir Laghi Furath, at the foot of La Rabbia, probably the Mons Asyphus of Ptolemy, between the maritime town of Catabathmus and the Hammorum Civitas. They encamped, for the night, by the well of Bir Vadi Rabbia, on the south side of the ridge: here they were obliged to halt several days, as an old wound in the general's arm had broken out afresh, in consequence of the fatigues of the journey. The Arabs, meantime, caught a fat wolf, which, though prohibited by their religion as being unclean, nevertheless furnished them a very delicate repast. The chamsin incommoded the caravan very much; then the

camp was alarmed by some peaceable ostrich hunters, whom their Arabs mistook for robbers; and a violent storm threw down the tents during the night, without, however, causing any injury to the party. After a six days' halt, they travelled through a country, the rich vegetation of which furnished ample food for the camels, and, for the night, pitched their tents near the well of Bir el Kamsi, where the camels found the last pasture before they reached Siwah. From this place the country assumed the features peculiar to the desert; nothing met the eye but sand and stones, which were strewed with innumerable small black pebbles, which had the appearance of scattered seeds. After three very long stages, they came to the Oasis. So far the journey offered nothing remarkable, except that the travellers met with the skeletons of five Arabs, who had perished there with their herds—a dreadful warning to those who cross the desert. They afterwards learnt, at Siwah, that they had escaped, by the darkness of the night, quite near to the Oasis, the attack of a band of Bedouin horsemen, who had gone in pursuit of their caravan. The Oasis is bounded on the north side by high rocks, which may be considered as ramparts and bulwarks, placed by nature itself to defend this fortunate spot against

every assault. The view from the edge of the valley into this fertile island of the desert, with its gardens and palm groves, is extremely pleasing and delightful, particularly after a tedious march, of many weeks, through the wilderness. The Arabs saluted, with loud cries of joy, this much desired goal of their journey; they leaped, danced, and sang, and discharged their guns without ceasing, so that the balls hissed round the ears of the travellers. The suspicious Siwahans hesitated, for a long time, whether they should admit General Minutoli or not; but at length, on considering the letters of recommendation delivered to them, they came to a favourable decision. They accordingly pitched their tents on the open space between the walls and the houses, near to the tomb of sheik Soliman, a Mahometan saint, not far from an oratory. The general invited the most considerable persons of the little state to come to him, and explained to them the object of his journey. Their answers, which, however, were satisfactory, clearly proved the extreme importance which they attached to their territory, and every thing in it. They seemed to be particularly apprehensive that the strangers might possess magic powers to the injury of their country; for all the monuments of the Oasis, especially the catacombs, are, in their

opinion, under the protection of mysterious fairy powers. They positively affirmed, that after the visits of the first Frank, Browne, in 1792, who penetrated into those subterraneous abodes, a spring had suddenly ceased to flow; that in an island of the Birket el Araschi, a small lake to the west of Siwah, the ring, the sword, and the crown of king Solomon, the great magician of the east, were buried, and destruction awaited them if those things should be taken away. Their superstition, therefore, makes them extremely distrustful of the Franks; they, however, gave Baron Minutoli full permission to visit and make drawings of every thing; in which he was more fortunate than his travelling companions, who, as we have seen above, after the failure of their expedition to the Cyrenaica, came to Siwah after the general had left it, and were treated almost like prisoners.

The soil of the Oasis is, for the most part, like that of the desert, only improved and fertilized by artificial irrigation. This peculiarity is also found in the other Oases of the Lybian desert. The word Oase, Oasis, Auasis, Arabic El Wah, Coptic Ouahsi and Ouahe, signifies, therefore, originally, merely habitation, or inhabited place; perhaps allied to the German word Aue, the primary meaning of which is, a stream, or cur-

rent, and then a country situated on such a stream, or intersected by rivers, and consequently fertile; also, good pasture land, and, in general, any verdant spot. The ancients gave this name, by way of distinction, to the two Oases nearest to Egypt, which, as Oasis Magna, and Oasis Parva, made two Egyptian Nomes. But the third, more remote Oasis, was much more known and celebrated in antiquity, on account of the ancient oracle of Jupiter Ammon; and the general gives additional confirmation, chiefly from indubitable geographical data, that this Oasis can be no other than Siwah, as conjectured by Rennell and Hornemann. The Oasis of Siwah is about nine miles in length, and no where much above two in breadth: the soil consists either of unmixed sand, or is covered with sandy clay, which is, for the most part, impregnated with saline particles. Numerous springs of fresh water flow through the country; there are, likewise, saline springs, and salt lakes, in which there are small verdant islets, containing fountains of fresh water. The vegetation is exceedingly luxuriant: dates, pomegranates, figs, olives, apricots, melons, and grapes, grow in abundance. But the chief production, and most lucrative article of commerce, is the date, which is exported to remote countries; from 5,000 to 9,000 camel loads are

gathered annually. They have, also, barley, rice, and oil; but of the two first only sufficient for their own consumption. The cattle of the Oasis consist of no more than 250 oxen, 1,500 asses, 300 goats, and but few camels, which do not thrive here. The Oasis, besides the chief town, Siwah Kebir (Great Siwah), contains three smaller towns or villages, Siwah Schargieh, Siwah Garbieh, and Maschie; they are all fortified, and well peopled. The whole population is devided into six tribes, and is estimated at 8,000 persons.

The Siwahans are turbulent and contentious, and generally conclude their quarrels by a kind of duel. Murder may be expiated by a fine; but if the relations of the deceased will not accept this compensation, the law of retaliation is rigorously enforced against the murderer. The administration of justice is very strict; a severe penalty is attached to theft, and to ill treatment of women. But a short time ago this little state was an oligarchy, which recognised the Turkish emperor as its sovereign, but without paying tribute. In the spring of 1820, Siwah was subdued by the troops of the pacha of Egypt, who imposed upon it a military contribution of 12,000 Spanish dollars, and an annual tribute of 2,000 camel loads of dates.

The ancient Ammonians were a colony of Egyptians and Ethiopians, and their language, according to Herodotus (ii. 42.), was a mixture of the languages of these two people. The complexion of the Siwahans is, even now, still darker than that of the Egyptians, and their dialect differs much from the common Arabic. According to a very ingenious historical investigation of the general, the present inhabitants of Siwah may really be the descendants of the ancient Ammonians.

The general's first visit, in Siwah, was to the ruins first noticed by Browne, and called, by the natives, Birbe, temple, but more generally Umebeda, (Omm Beydah of Drovetti). It lies a league to the south-east of Siwah Kebir, between Schargieh and the mountain Gebel-Drara Enbrik, from which they procured the materials for building the monuments. The entrance of the temple directly faces the north. A quarter of a league to the south-east of the ruins, in a pleasant grove of date palms, is the Fountain of the Sun, formerly dedicated to Jupiter Ammon, which forms a little lake. Among some trees, in its immediate vicinity, are the foundations of a small antique building. A limpid brook, which issues from the lake, soon joins another spring in the same palm grove, and flows towards the

ruins, where it forms a swamp, doubtless because the ancient drains are stopped up. Palm bushes and rushes grow in abundance in this marsh, and the ground round about the temple is every where swampy and damp. The remains of the temple plainly show, in every respect, the ancient Egyptian style; it was surrounded with a wall, which separated the sacred enclosure from the less holy ground. Of this outer wall the only remains are some prodigious hewn stones, at the four corners; the length was 70 paces, the breadth 66 paces, and the sides are pretty accurately turned towards the cardinal points. Within it are still more decayed fragments of a second wall, and, in the middle of the whole, a mass of rock, which, perhaps, was made use of as the stylobatum of the temple. The remains of the temple itself consist of a kind of pronaos and an inner sanctuary.

As the back southern wall has wholly disappeared, the original extent of the sacred building is not now to be determined, but it cannot have been great. The inner chamber was covered with large flat stones, three of which are still in their proper places. When Browne visited the temple, five of them were in their original position; but an earthquake has thrown down two of them, and done, besides, considerable damage to the

ruins. The stones are cemented with mortar, and of very different dimensions, which seems to show that the architect had no great choice of materials. The whole temple was covered, within and without, with mythological sculptures and hieroglyphics, which, however, are not every where in equally good preservation; they appear the most distinct on the inside of the chamber, and on the entrance doors of the pronaos. The intervals between the hieroglyphics on the walls and on the ceiling, were painted; green and blue are the principal colours. But almost every trace of colour has vanished on the outside of the temple, and on the larger figures.

The sculptures of the temple seem to form a complete and connected mythological series. Close to the chief entrance, Ammon receives homage from a king, who presents two obelisks. Behind the god, stands Venus Dione, as inmate of the temple. As immediate ornaments of the portal, we see the Agathodemon, in the form of a serpent, introduced as an arabesque border; a male sphinx, reposing, with the water urn of the sacred Nile between his fore feet; the sacred falcon, the symbol of the god; and next to it, the disk of the sun, half surrounded by the serpent, the eternal vivyfying genius of the universe, bearing on its neck the mystic key. A mass of

rock, which has fallen down, seems likewise to have sculptures of the exterior. First appears Isis, distinguished by the disk between the horns on her head; and Osiris, according to Ammonian mythology, the son of Ammon, with the head-dress and palm branches; above, the goat's horns, between which is the disk of the sun: then follow two divinities, male and female, with serpents' heads, doubtless good divinities, of the first class, and protectors of Egypt; then Hercules, called, in Egyptian, Sjom, the personified energy of the gods, with the sphere on his head; and Minerva, with the ram's head, the mysterious goddess of Sais and mother of the sun, with the solar disk and the symbol of the Agathodemon. Of the male figure following Minerva, only the arm and sceptre are preserved, and all the other sculptures of the exterior of the temple are too much decayed to be ascertained.

The interior is likewise entirely covered with sculptures, the symmetrical arrangement of which is very pleasing to the eye. The decorations of the two sides exactly correspond with each other: below, a scalloped border; then three rows of figures, the higher being the narrowest; then a great hieroglyphic inscription, running all round, in *perpendicular* columns. The height of the walls,

from the border to the ceiling, is 19½ feet. The ceiling is ornamented with eagles, or vultures, with outstretched wings, and badges of command in their talons; between stars, the primeval symbols of royal dominion, here in reference to Ammon, the king of the gods; or, if they are vultures, symbols of heaven, of prophecy, of the year, and of mercy. At the upper part, next the ceiling, a symbolical row of figures, as an arabesque ornament: sacred falcons, over which is the disk of the sun, surrounded by the good genius, do homage to the sceptre of the gods; between them, tablets ornamented with hieroglyphics. The second, rather narrower, row of figures, contains the representation of a religious festival, probably resembling that of the table of the sun in Ethiopia. (Herodotus iii. 17, 18.) Here are pilgrims coming from a distance, with staffs; others saluting each other; men bearing dishes, or presenting their hands as if to dance; then, sacred candelabra, in the form of the lotus cup, before which stand persons praying, tables set out, and numerous platforms. Below the hieroglyphics is a broader line of figures of masks of divinities. Ammon, with the ram's head, here acts the principal part; on both sides he is represented enthroned in a sanctuary, composed of lotus stems, with his face to the en-

trance, worshipped by a kneeling figure, probably the founder of the temple, and surrounded by divinities, inmates of his temple. Male and female deities here alternate regularly; the male, according to the ancient Egyptian fashion, in a walking attitude; the females with the feet close together, but all with their faces turned towards the entrance of the temple. Here is Isis, next to Ammon, bearing Sirius between the gazelle horns on her head; and Osiris, as lord of the lower world, with the crook and scourge; then the same, as lord of life and of creation, with ostrich feathers, the mystical scourge, and a large phallic excrescence. After this, an unknown goddess, perhaps the personification of Egypt; then the primitive god, Phtha, the personification of primeval fire; Neith, the goddess of the æther; Anubis, the guardian of the infernal empire; and Aletheia. Then, again, Osiris as king of the sun and god of the year, and Minerva, the mother of the sun.

The representations on the opposite side are arranged in a similar manner. First, Ammon, with the ram's head, on a throne, with goat's horns and palm leaves on his head, in a sanctuary formed of lotus stems; before him a kneeling worshipper. Then Osiris, as representative of Prophecy; Ithea-Tithrambo, the mother of the

gods; and Kronos Apopis, the youngest of the gods of the second order. Then follow two priestesses, and, between them, the Hierogrammateus. Then a priest with the jackal's head, probably the director of the embalmers; then a priestess of Isis or Luna, and, lastly, the high-priest of Ammon himself. They all carry in one hand the mystic key, in the form of a cross, and fastened to a ring; and in the other the sceptre of power. Over them are small tablets with hieroglyphics.

On the following line of figures, which is a third broader, there is a solemn sacrifice. On the right wall of the temple there is, first, a defective female figure; then the Ibis-headed Hermes Trismegistus, the Teuth of the Egyptians; and Horus, and the Typhon conquered by him. Then two altars: on the one, the crocodile sacred to Typhon; and on the other, the small ichneumon, its natural adversary. The altars are simple, but elegant, and consist of two stages: on the lower lie the sacred animals; and on the other, as it seems, a bloodless offering, composed of cakes. Before the altar are two priestesses, with rams' heads; with sacrificial knives, of various forms, in each hand. Then follow three priests, with masks of divinities: the first with the attributes of Osiris, as king of the sun; the two others with

rams' faces, and serpents over the crown of the head. Opposite, on the left wall of the temple, there is a row of male and female worshippers, with uplifted hands; among whom may be distinguished some consecrated to Aletheia, Minerva, Helios, and Mendes. The lower and broadest line of figures is most damaged; very little can be made out. A small sanctuary, with the image of Osiris, seems to have formed the centre. Among the surrounding figures we find Venus Dione, Minerva, Maneros, Horus, and Helios, with their attributes. Under this row is the border, as the lowest decoration of the walls.

The Fountain of the Sun, so celebrated in antiquity, is about 30 paces in length, 20 paces in breadth, and the depth is stated to be six fathoms. It is perfectly transparent, and innumerable small bubbles constantly rise from the bottom, as in a kettle of boiling water. A periodical change in the temperature of the water is still perceptible; it is warmer by night than by day; and a steam usually rises from it in the morning: which fact was known to the ancients. Close by, in the shade of the palm grove, as before observed, there are the ancient foundations of a small temple, probably the last remains of the little Ammonian sanctuary mentioned by

Diodorus (xvii. 50,) as being near the fountain of the Sun.

The village of Siwah Schargieh, situated on a hill in the vicinity of Umebeda, appears to be the site of the ancient royal palace of Ammon. Its situation is entirely in favour of this supposition, (Curtius, iv. 7; Diodorus, xvii. 50); and antique remains are still to be found at Schargieh. Numerous catacombs are spread through the whole Oasis; almost all the mountains are excavated with them, especially the Gara El Mota Schargieh (the hill of Sepulchres towards the east). The sepulchres and passages are hewn in the limestone rock, without much skill, painted green, red, yellow and blue, and covered with hieroglyphics. There are also traces of Greek inscriptions. Unfortunately, in all the catacombs that are explored, we find, instead of well-preserved monuments, nothing but desolation, rubbish, and fragments, crumbling bones and torn bandages. A part of these catacombs was inhabited, in 1820, by a tribe of Arabs from the Oasis of Augila, and forms a kind of subterraneous village. A dispute between his sheik and the people of Siwah prevented the general from visiting the sacred lake, Birket el Araschi; but he was assured that there were no antique monuments

on the islands in that lake, which has since been fully confirmed by Mr. Drovetti.

On returning from Siwah to Cairo, the caravan took the usual route through the desert, and touched at the small and verdant, though uninhabited, Oasis of Eintewein. This is probably the place which Ptolemy mentions as the camp of Alexander, and perhaps the chief station of the Macedonian army, while the king visited the temple of Jupiter Ammon. The party also visited the little Oasis of El Gara, called Karet-Am-el-Sogheir by Browne, and Umme-Sogheir by Hornemann. It was formerly very fertile, and produced much corn, though it is scarcely four miles in circumference. But now very little corn is grown; which, perhaps, comes from the neglect of the springs; and the principal produce is dates. The whole population amounts to no more than fifteen families. The rock on which El Gara is built is excavated, in every part, into catacombs. Ancient foundations, of hewn stones and burnt bricks, which are every where met with, prove that in remote antiquity this Oasis was well peopled; and it can hardly be doubted that we are to look here for the ancient Siropum of Ptolemy, (Geogr. iv. 5, p. 104.) The most considerable ruins are called, *by the natives,* Kasser Pharis; from which we

may infer that there was a castle built by the Egyptians.

From El Gara the caravan continued its march through a desolate wilderness, between two limestone ridges; and passed the salt springs of Abdinovi and Mount El Gebara, where there are numerous gazelles, to the spring of Bir Haghi. On its farther route it touched at the mountains of Abour-Tarlou, Marsouk, Tarfai, Mongar-el-Dokar, and Lubba. In this part the scene was frequently enlivened by insulated groups of palms; and in the vicinity of the wells there were every where traces of gazelles, wild cows, wolves, and ostriches. Here, too, they saw petrified wood, in great abundance and in large pieces, in which they could plainly distinguish the grain, and that they were of different species. The country, therefore, was probably once fertilized by streams of fresh water; which is evident from the whole face of the valley through which the caravan passed. From Mount Lubba they went through the villages of Mogara and Gonadolingsan, near the Bahr-Bela-Ma (Stream without Water), over a sandy ridge to the lakes of natron. In ancient times a western arm of the Nile is said to have flowed through the Bahr-Bela-Ma, towards the sea, which was dammed up by Menes, (Herodotus, ii. 99,) to fill lake Moeris and supply

Lower Egypt with water. It is evidently the bed of a river dried up, extending from south-east to north-west, towards the sea, near the western end of the Mareotis; but it must continue undecided whether this primitive bed has been dried up by nature or by art.

Near the Lakes of Natron the travellers were very hospitably received in the camp of the Jovaisi Arabs, who are employed in the conveyance of the natron. There are six lakes, the produce of which differs, containing more or less muriatic, carbonate, or sulphate of soda. The travellers visited none of the four ancient Coptic convents in the natron valley; but proceeded, without stopping, by the mountain pass of Rass-el-Bakara, in the valley of the Nile, where they reached in a short time Terraneh, (the ancient Terenuthis,) the rendezvous of the caravans with natron. Here the general dismissed his Arabs, and embarked on the Nile for Cairo, where he found his lady in the house of the Prussian consul, Mr. Rosetti. But the pleasure arising from his safe return was damped by the death of his esteemed friend, Lieutenant Gruoc, who died of the typhus fever and the fatigues of the journey, a few days after their arrival at Cairo: to this was added the unfavourable account which the general received from his friends, who had parted with

him to visit the Cyrenaica, and with whose adventures the reader is already acquainted.

Having thus analysed at considerable extent the more novel part of this interesting narrative, we shall not accompany the general in his visit to Upper Egypt; nor dwell on his account of the remarkable, but well-known antique monuments of that country; in which, however, the reader will find much that is new, and, where an opportunity offers, judicious corrections of errors in the magnificent French description of Egypt. We subjoin, however, two extracts, as being entirely new.

At Syene Mr. Segato, one of the general's companions, discovered a subterraneous apartment, which probably served for the observation of the summer solstice; the ancients being of opinion that the old town was precisely under the tropic of Cancer. In the ceiling of the room there is a small opening, and, perpendicularly under it, on the ground, a raised point, exactly corresponding with the opening, to receive the ray of the sun when at its greatest elevation. From Syene the general went to the little island of Elephantina, where he was so fortunate as to obtain some very interesting Greek and Egyptian inscriptions upon earthenware, which are now in the royal museum at Berlin. Two of them are in Greek current

hand, which have been decyphered by the learned Professor Buttmann. One of them is a receipt, dated in the ninth year of the reign of Vespasian, of the 3rd of the month of Tybi; and the other dated the 21st year of the reign of the emperor Antoninus, the 4th of the month of Payni.

Previous to his departure from Cairo for Upper Egypt, the general had given directions for opening, during his absence, the great pyramid at Sakara. Upon his return he found that they had succeeded, having been so fortunate as to discover the ancient entrance. An immense quantity of fragments of marble and alabaster vases lay scattered in the passages and chambers, and proved that the pyramid must have been opened by violence in very ancient times, but by a different entrance from that by which it was now penetrated. This pyramid has the following peculiarities: it is not placed accurately, according to the cardinal points, and its base is not a regular square, but an oblong. It is, besides, enclosed with a wall 14 feet thick, built in seven breaks, like steps, and is, in fact, merely the coating of an immense rocky nucleus, in which the passages and chambers are hewn. The door of one of the chambers is bordered with hieroglyphics in relief; over another are hieroglyphics *traced with* black, and the walls are covered

with a kind of mosaic, consisting of green convex pieces of porcelain ingeniously fixed in stucco. The fruits of this expensive undertaking were, on the whole, trifling. The richly gilded scull, hands and feet of a mummy, perhaps those of the king deposited in the pyramid, and the well-preserved head of a sacred vulture (*vultur percnopteros*), were obtained by the general; but unfortunately many very valuable articles were stolen by the workmen on the first opening of the pyramid.

It was the general's intention to proceed next to Syria, and he in fact embarked with that view for Damietta, accompanied by Mr. Drovetti. But they had scarcely arrived at Damietta when news was received of the general insurrection of the Greeks; and, taking every thing into consideration, the general thought it best to return to Europe. He therefore went to Aboukir, and thence to Alexandria, and embarked in an Austrian ship for Triest, where he arrived after a passage of 39 days.

We have thus given a succinct analysis of this important and interesting work, selecting chiefly those parts that present the greatest degree of novelty; which we doubt not will be acceptable to our readers, who will certainly be glad to be informed that a translation has been advertised by Messrs. Whittaker for speedy publication.

SKETCH OF THE LIFE

OF

FREDERICK HENRY ALEXANDER BARON VON HUMBOLDT.

THIS celebrated traveller was born at Berlin on the 14th of September, 1769. His first instructors were Mr. Knuth, afterwards Prussian privy counsellor, and Mr. Zöllner, chief counsellor to the Consistory. After having studied at Göttingen and Frankfort on the Oder, he attended the commercial academy of Professor Büsch at Hamburgh; and in the spring of 1790, in company with Messrs. Forster and Van Geuns, visited Germany, Holland, and England: on which occasion he made profound observations on subjects relative to the natural history of those countries, but particularly of the two banks of the Rhine; the result of which was the publication of his first work, entitled "Observations on the Basalts of the Rhine," Brunswick, 1790. In 1791 he repaired to the academy at Freiberg, to profit by *the lessons of* the celebrated Werner; and, hav-

ing diligently studied botany and mineralogy, published his Specimen *Florœ Fribergensis subterraneæ*, Berlin, 1793. At Freiberg he was universally esteemed and beloved for his knowledge, his interesting and instructive conversation, his wit and humour, and for his benevolent and charitable disposition.

In 1792 he was appointed assessor of the council of mines at Berlin, and then director-general of the mines in the principality of Baireuth and Anspach in Franconia. In these countries he formed extensive and useful establishments, such as the School for Mining at Steben, which has already produced many men of eminence. Baron Humboldt was one of the first whose attention was attracted by the fine discoveries of Galvani; and not contented with repeating his beautiful experiments on the nervous and muscular irritability of animals, he had the courage to make very painful experiments upon himself, the results of which he published in German, with notes and observations by the celebrated naturalist Blumenbach, Berlin, 1796, 2 vols. 8vo. But in 1795 he resigned his situation, to the great regret of all those under him, and travelled, in company with Mr. Von Hafter, to Italy, and in the autumn, with his friend Mr. Freisleben, through a part of Switzerland. In 1797 he went, with his

brother and Mr. Fischer, now Russian aulic counsellor, by way of Vienna and Salzburg, to Paris, where he became acquainted with Aimé Bonpland, a pupil of the school of Medicine and the Botanic Garden at Paris.

Having entertained an intention, ever since 1792, of visiting the tropics at his own expence, he was inclined to accompany Baudin, who was going to undertake a voyage round the world; but the renewal of the war with Austria hindered him from embarking. He then thought of joining the French savans in Egypt, from which country he hoped to penetrate into Arabia, and thence, by way of the Persian gulf, to reach the English dominions in India. He accordingly repaired to Marseilles, to embark on board a Swedish frigate which was to take a consul of that nation to Algiers; but having waited in vain for two months, for the departure of the frigate, he resolved to go to Spain, where he doubted not he should easily find means for passing to Africa. When he arrived at Madrid he was received with merited distinction, not only by all the Spanish literati, but also by the government, and obtained from the court the extraordinary favour of being permitted to travel at pleasure through all the Spanish colonies in South America. This unexpected permission changed all his plans.

He immediately wrote to his friend Aimé Bonpland at Paris, inviting him to come without loss of time, and join him in the vast enterprise which he had just planned. Mr. Bonpland did not hesitate to comply with his proposal, and the two friends, well provided with physical and astronomical instruments, set sail from Corunna on board a Spanish vessel.

They landed on the island of Teneriffe, and ascended the Pico for the purpose of analysing the atmospheric air, and of making geological observations on the basalts and porphyry slate of Africa. They arrived in the harbour of Cumana, in South America, in the month of July, 1799. In the course of the years 1799 and 1800 they visited the coast of Paria, the missions of the Indians, and the province of New Andalusia: they traversed New Barcelona, Venezuela, and Spanish Guyana. Having determined the longitude of Cumana, Caraccas, &c. by the observation of Jupiter's satellites, and botanized on the summits of the Ceripa, they left Caraccas in February 1800, for the beautiful vallies of Aragua, where the large lake of Valencia delights the traveller by its luxuriant tropical vegetation.

From Portocabello they went from the coasts of the sea of the Antilles nearly to the Equator; traversed then the extensive plains of Calabozo,

Apura, and the Llanos, where Reaumur's thermometer rose, even in the shade, to 33—37°; and the burning soil, for an extent of 2000 square miles, showed a variation of the level of only five inches: on the sea coast, too, they every where observed the phenomena of refraction. At San Fernando di Apura, they began a tedious navigation in canoes, of above 500 miles, and made an astronomical survey of the coast by means of time-keepers, Jupiter's satellites, and lunar distances. They sailed down the Rio Apura, which joins the Orinoco in 7° of latitude; ascended that river again as far as the mouth of the Rio Guariare, passed the celebrated waterfalls of Atures and Maypure, where the cavern of Atarnipo encloses the mummies of a nation destroyed in the wars of the Caribbees and Maravites. From the mouth of the Rio Guariare, they ascended the little rivers of Atahapo, Tuamini and Temi.

They penetrated by land from the Mission of Javita to the sources of the Guginia (Rio Negro). A dozen Indians carried the canoes through thick woods of *hevea*, *lecythis*, and *laurus cinnamomoides*, to the Cano Pimichin, through which they came to the Rio Negro; down which they sailed as far as the fortress of San Carlos, and the frontiers of Grand Para, the chief capitania of Brazil. The misunderstandings between

Spain and Portugal prevented the travellers from going beyond St. Gabriel de las Cochuellas: but this obstacle was less regretted, as Condamine and Maldonado had already astronomically determined the mouth of the Rio Negro. On the other hand the arm of the Orinoco, called Cassiquiari, and which forms a communication between it and the river of the Amazons, had still to be determined. For this purpose Humboldt and Bonpland proceeded from the Spanish fort of San Carlos, by the Rio Negro and the Cassiquiari, back to the Orinoco, and on it as far as the Mission of Esmeraldas, near the volcano of Duida, or to the source of the river. But the Guaicas Indians, a white, dwarfish, yet warlike race, and the copper coloured Guajaribes, savage cannibals, who inhabit the country to the west, made it impossible for them to penetrate to the sources of the Orinoco. From Esmeraldas they sailed 345 French miles down the whole of the Orinoco, to its mouth, to St. Thomas, in New Guayana or Angostura. The travellers passed the cataracts for the second time; to the south side of which neither Peter Gumilla nor Caulin had penetrated.

After enduring great hardships they returned on the Orinoco to Barcelona and Cumana, through the Missions of the Caribean Indians, a gigantic race of men. They remained some

months on the coast, and then went through the southern parts of San Domingo and Jamaica to Cuba. They spent three months at the Havannah, the geographical situation of which place Mr. Von Humboldt for the first time precisely determined; and instructed the planters of that colony in erecting stoves on the most advantageous model for boiling the sugar.

They were just preparing to set out for Vera Cruz, to go by way of Mexico and Acapulco to the Philippine Islands, and thence, if possible, by way of Bombay, Bassora, and Aleppo, to Constantinople, when false accounts of Captain Baudin's voyage induced them to alter their plan. It was stated in the American papers, that this navigator would proceed from France to Buenos Ayres, and, after doubling Cape Horn, sail along the coasts of Chili and Peru. On his departure from Paris, in 1798, Humboldt had promised the Museum and Captain Baudin, that if the French expedition took place before he returned from his travels, he would join it. For this purpose Mr. Von Humboldt sent his manuscripts and collections of 1799 and 1800, direct to Europe, where they arrived safely, with the exception of a third part of his collections, which were lost in a shipwreck; he then hired a vessel in the harbour of Betabano, to proceed to Carthagena, and thence

through the isthmus of Panama to the Southern Ocean. He hoped to meet Baudin either at Guayaquil or Lima, and to visit with him New Holland and the islands in the Pacific.

He left Betabano in March 1801, sailed along the southern part of the island of Cuba, and determined astronomically several points of the group of islands, called the King's Garden, and the landing place of the harbour of Trinidad. They spent some time on the Rio Sinu, which no botanist had ever yet visited. The violence of the surf at St. Martha made the landing at Carthagena very difficult; and they were obliged to come to anchor close to the coast: by this delay Baron Von Humboldt had an opportunity of observing the eclipse of the moon on the 25th of March 1801. As the season would no longer permit them to sail from Panama to Guayaquil, they gave up the plan of crossing the isthmus. The desire of visiting Mutis, the celebrated American naturalist, induced the travellers to spend some weeks in the forests of Turbaco, which are adorned with many magnificent flowers; and then to sail down the river Magdalena, of which Humboldt made a chart, while Bonpland studied the luxuriant vegetation, abounding in Melastoma, Myrodia, Dychotria emetica, Heliconia, and Psychotria. From Honda, where they

landed, they travelled over dreadful roads, through forests of oaks, and thickets of Melastoma and Cinchona, to Santa Fe de Bogota, the capital of New Grenada. The splendid collections of Mr. Mutis, the great cataract of Taquendama, the mines of Mariquita, St. Anna and Zipagnira, the natural bridge of Icononzo, formed by two rocks torn asunder by an earthquake, and supporting a third in the air; all these curiosities detained our travellers till September 1801.

Notwithstanding the unfavourable rainy season they went to Quito; they again descended into the valley of the Magdalena, passed by the Andes of Quindiu, where the snow-crowned summits of the Tolina rise amidst forests of storax, arborescent passion flowers, bamboo and wax palms. (myrica cerifera?) They arrived, barefooted and quite wet through, in the valley of the Cauca, stayed some time at Carthago and Buga, and traversed the province of Choco, where platina was first found. They now ascended through Caleto, and the gold washings of Quilichao, to Popayan, on the foot of the snowy volcanoes of Purace and Sotara. In this beautiful climate the thermometer was always from 17° to 19° Reaumur. They ascended with difficulty to the crater of the volcano of Purace, the mouth of which is full of boiling water, and in the midst

of the snow emits exhalations of sulphuretted hydrogen. Avoiding the pestilential valley of Patia, the travellers passed over the steep Cordilleras of Almaguer to Pasto, and then traversed through Guachucal, the elevated plateau of the province de los Pastos.

After a very fatiguing journey of four months, they at length arrived in the southern hemisphere, in the cities of Ibarra and Quito. It was on the 6th of January, 1802, that they reached this latter city, which is distinguished for the amiable manners and intellectual acquirements of its inhabitants. They continued their geological and botanical searches for near nine months, in the kingdom of Quito, so remarkable for its colossal mountains, its volcanoes, vegetation, and ancient monuments, but, above all, for the manners of its former inhabitants. They twice descended into the crater of Pichincha, where they made experiments on the air, its elasticity, electricity, magnetism and moisture, and on the degree of temperature of boiling water. Mr. Von Humboldt and his friend, meantime, made occasional excursions to the snowy mountains of Antisana, Cotopaxi, Tumguragua and the Chimborazo, and studied in particular the geognostic nature of the Andes. The trigonometrical and barometrical measurements of Baron Von Humboldt prove

that some of these volcanoes have sunk considerably since the year 1755; results which coincide with the observations of the natives. Humboldt also convinced himself that all these immense masses have arisen through crystallization.

The Marquis of Selvalegre, a young man passionately fond of the sciences, had joined them in January 1802, and accompanied them on the whole of their tour through Mexico and Peru. Circumstances being favourable, they ascended the principal summits to an elevation which no preceding traveller had ever attained. On the 23d of June 1802, they were upon Chimborazo, 19,500 feet above the level of the Pacific, being 3,485 feet higher than Condamine in 1745. The blood issued from their eyes, lips and gums, and they were benumbed with cold. A ravine prevented them from reaching the summit of Chimborazo, which was 2,140 feet higher.

As letters from Europe disappointed their hopes of joining Captain Baudin, they repaired from Quito to the river of the Amazons, and Trina, in expectation of observing the transit of Mercury over the sun. They visited the ruins of Lactacuga, Hambato and Riobamba, a country which was ravaged by the dreadful earthquake of the 7th of Feburary, 1797, which swallowed up in an instant above 40,000 persons; crossed the

snow-fields of Assonay to Cuenca, and thence through the Paramo Saraguro to Loxa, where they made important experiments on the Peruvian bark, in the forests of Gonzanama and Malacatos. From Loxa they arrived in Peru, by way of Ayavaca and Gonzabamba, having crossed the high Andes to reach the river of the Amazons. They viewed the magnificent remains of the Causeway of Yega, which passes over the porphyry ridge of the Andes, from 1,200 to 1,300 toises elevation, and from Cusco to Assonay, and is provided with inns and public fountains. In the village of Chamaya they embarked on a raft and proceeded down the river of that name, into the river of the Amazons, and determined astronomically the place of the confluence. As Condamine did not embark on the Amazons till below Quebrada de Chuchunga, and made no observations on the longitude except at the mouth of the Rio Napo, Baron Humboldt endeavoured to supply this deficiency, by sailing on the Amazons as far as the cataracts of Rentewa, and drew, at Tomependa, a circumstantial plan of this unknown part of the Maranon. Mr. Bonpland has meantime employed himself in botanizing. Our travellers now passed the Andes for the fifth time, and returned through Montan to Peru. They determined the point where the magnetic needle

of Borda shows the variation, though under the 7th degree of south latitude, and explored the rich mines of Hualguayok, where silver is found at 2,000 toises above the level of the sea. From Caxamarco, which is celebrated for its baths and ruins, they descended to Truxillo, in the vicinity of which are the remains of the immense Peruvian city of Mansiche, adorned with pyramids; in one of which, gold, to the value of four millions of livres, was found in the eighteenth century.

It was on descending this west side of the Andes, that they enjoyed, for the first time, the striking view of the Pacific Ocean, and of that long and narrow valley, where rain and thunder are unknown. They went along the barren coasts of the South Sea, by way of Santa and Guarmey to Lima, where Humboldt was so fortunate as to be able to observe, with tolerable accuracy, in the harbour of Callao de Lima, the end of the transit of Mercury.

In January, 1803, our travellers embarked for Guayaquil, situated on the banks of an immense river, where the vegetation of the palms, plumaria, tabernæmontana, and banians, is inconceivably magnificent. In thirty days they reached Acapulco. Much as Humboldt wished to hasten his return to Europe, yet the beauty of New

Spain, the hospitality of its inhabitants, and fear of the epidemic which was raging at Vera Cruz, induced him to defer his departure till late in the winter. After having observed the vegetation, the air, the hourly changes of the barometer, the magnetic phenomena, but especially the longitude of Acapulco, he set out for Mexico. They gradually ascended through the sultry vallies of Mescalo and Papagayo, where the thermometer stands in the shade at 32° Reaumur. They crossed to the elevated plains of Chilpanzlugo, Thenilotepec and Tasco, in the mild climates of which oaks, cypresses, firs, and European corn, flourish in perfection. Here they visited the silver mines of Tasco, the silver veins of which pass from the hard limestone rock to the mica slate, and contain foliated gypsum. In April, 1803, they descended through the plains of Cuernaca, and the fogs of Cuchilaqua to the capital city of Mexico, which lies in a most agreeable situation, and is distinguished by its scientific institutions above all the cities of the new world. After a stay of some months, during which Humboldt corrected the longitude of Mexico, our travellers visited the celebrated mines of Moran and Real del Monte, where the vein of Biscaya had already produced to the the Count of Begla several millions of piasters.

They examined the obsidians of Oyamel, which forms layers between the pearlstone and porphyry, and served the ancient inhabitants for knives. The whole country, which is full of blocks of basalt, amygadaloid, and calcareous secondary formations, affords very interesting geological phenomena.

In 1803, they visited the southern part of the kingdom: they first directed their attention to Hunhuetoca, and then went through Quertano, Salamanca, and the fertile plains of Yrapualo, to Guanaxuato, the mines of which are infinitely more considerable than those of Potosi ever were. They here spent two months in measurements and geological investigations, analyzed the baths of Comagillos, and travelled then through the valley of St. Yago to Valladolid, the capital of the former kingdom of Michoacan. From this place, notwithstanding the constant autumnal rains, they descended towards the coasts of the Pacific Ocean into the plains Jorullo, where, in the year 1759, in one of the greatest catastrophes that the globe ever experienced, a volcano rose from the ground in a single night to the height of 1,494 feet, surrounded with more than 2,000 small openings, from which smoke still issues. They descended to the bottom of the crater, and analyzed the air, which contains an extraordinary

proportion of carbonic acid. From the beautiful and fertile kingdom, Michoacan, they returned to Mexico through the high plain Toluca. At Toluca they visited the remarkable Cheirostomon Platanoides, which is of the highest antiquity. It is nine ells in circumference, and is supposed to be the only tree of the species now existing in New Spain.

In Mexico they employed themselves in arranging the botanical and geological collections, the calculations of the measurements they had made, and the geological atlas, for which Mr. Von Humboldt had made the drawings. They left this city in 1804, to visit the eastern side of the Cordilleras; measured geometrically the two volcanoes of Puebla, namely, the Popocateptl and Itzaccihuatl, and then went through Perote to Xalapa. In spite of the deep snow, Mr. Von Humboldt reached the summit of Cofre, which is 162 toises higher than the Pico of Teneriffe, the situation of which he determined by direct observations. He also measured, trigonometrically, the Peak of Orizaba. After an interesting stay in these parts, our travellers repaired to Vera Cruz, happily escaped the epidemic, which was then at its height, and embarked on board a Spanish frigate for the Havannah, where they took their collections, which they had

deposited there in the year 1800. They remained here two months, and then sailed to Philadelphia, where they arrived after a passage of 32 days. Here, and at Washington, they spent two months more, and in August, 1804, arrived in France, after having passed six years in the most useful and honourable labours, but accompanied with fatigues, dangers, and hardships of every kind.

During his long travels Mr. Von Humboldt extended his researches to the three kingdoms of nature: he has diffused new light on the natural history of man, and that of the greater number of the animals of these countries. By the most accurate observations he has rectified the errors that had been committed in determining the geographical position of most of the points in the New World; and by giving the profiles of the vertical sections of all the countries that he has visited, he has found a means equally new and ingenious, to unite, in one point of view, the results of all his topographical and mineralogical observations. The herbal which he has brought from Mexico is one of the richest in exotic plants ever seen in Europe, being composed of 6,300 different species. His collection of minerals is equally interesting. In short, the mass of valuable information and of new discoveries, which he has added to the stock of our knowledge, surpasses

every thing that has been done by any preceding traveller.

In October 1818, he was in London, where it was reported that the Allied Powers had applied to him to draw up a view of the political relations of the South American colonies. In November, 1818, his majesty the king of Prussia, desirous of promoting his plan to visit Asia, and especially the mountains of Thibet, one of which is said to be 3,000 feet higher than Chimborazo, granted him an annual pension of 12,000 dollars, and the use of the most necessary philosophical and mathematical instruments. We are not informed what causes have delayed or prevented this journey, from which the most valuable results might have been expected.

Mr. Von Humbolt has published a great number of works, the later ones in concert with Mr. Aimé Bonpland. United by the bonds of the strictest friendship, these two naturalists have agreed that their names shall appear together at the head of all their publications, and that the prefaces shall point out the parts which each of them in particular has treated. The account of the travels, and the important information obtained in them, has been published by Mr. Von Humboldt in various splendid works, which have appeared, since 1810, at Paris, London, and

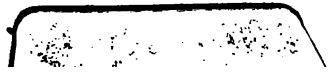
Hamburg, in several separate divisions: one appropriated to the personal narrative of the travellers; another containing views of the Cordilleras and Monuments of the people of America; another division is dedicated to Zoology and Comparative Anatony; another to a political essay on New Spain; the others to Astronomy, Mineralogy and Magnetism, and, lastly, to Botany. The whole, when completed, will make twelve volumes in 4to., three in folio, two collections of geographical designs, and one of picturesque views; a gigantic work, which, for extent and intrinsic value, is scarcely to be paralleled in the modern literary history of Europe.

Baron Von Humboldt presented to the Academy of Sciences, in 1817, his Carte du fleuve de l'Orenoque, which shows the junction of that river with that of the Amazons by the medium of the Rio Negro. The celebrated d'Anville had presumed this confluence, which is now proved. The last work that Mr. Von Humboldt has published is a volume on the superposition of rocks in the two hemispheres.

Baron Von Humboldt has likewise, in concert with Mr. Gay Lussac, made various magnetical experiments. They have verified, by their joint labours, the theory of Mr. Biot on the magnetic equator; and they have found that the great

chains of mountains, and even volcanoes, in a state of eruption, have no sensible influence on the magnetic power. They have also found that this force diminishes progressively in proportion to the distance from the equator. Accounts of the travels of Mr. Von Humboldt have been published in many languages, but he has disavowed these editions, in which he had no concern.

The king of Prussia, when he went to the Congress of Verona in 1822, sent for this illustrious traveller, in order to have the advantage of his company in his intended tour through Italy: he visited with him Venice, Rome, and Naples, where Mr. Von Humboldt made some valuable observations upon Mount Vesuvius. Still in the enjoyment of uninterrupted health, and constantly animated by the same zeal for the advancement of science, there is every reason to hope that the learned world will be still further benefited by his labours; and whether he may realize his long cherished intention of visiting Asia, or return, as has been lately reported, to the South American continent, the public will feel equally interested in the success of his honourable and arduous enterprise, and anxious for his safe return.

FINIS.

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